VOLUME 32, NUMBER 1, MARCH 1996 ISSN 0001-3072

ABACUS

A Journal of Accounting, Finance and Business Studies

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Published for the Accounting Foundation
University of Sydney
by
Blackwell Journals — Oxford and Cambridge, Ma.

Print Post Approved PP349181/00203

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Editorial correspondence should be addressed to The Editor, ABACUS, c/ - Department of Accounting, University of Sydney, N.S.W. Australia 2006.

ABACUS will be published twice yearly in 1996 and the annual subscription price is: institutions A$97.00, individuals A$48.00 (Australasia); institutions £61.00, individuals £31.00 (Europe); institutions U.S.$111.00, individuals U.S.$64.00 (North America); institutions £69.00, individuals £40.00 (rest of the world). Subscriptions include delivery from Australia by surface air-lifted post. Canadian customers/ residents please add 7% for GST. All subscriptions are supplied on a calendar year basis (January to December).

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ABACUS, Vol. 32, No. 1, 1996

SIMON ARCHER, PASCALE DELVAILLE AND STUART MCLEAY

A Statistical Model of International Accounting Harmonization

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This article shows how the difference between the observed frequencies of accounting policy choice and the outcome of a random policy choice, where each available method has an equal chance of being selected, may be fully explained with a statistical model. The process of harmonization is described in a way that identifies departures from equiprobable accounting policy choice as either: (a) the systematic effects of harmonization, or (b) the effects of systematic divergence from international harmony where the frequency of adoption of differing accounting methods varies across countries, or (c) the effects of company-specific accounting policy choices.

The understanding of *harmony* that underlies previous attempts to measure harmonization is such that, with respect to a particular financial statement item, a situation of maximum harmony is reached when all companies in all countries use the same accounting method. From the standpoint of modelling the harmonization process, however, a different concept of harmony may be more useful. In this article, therefore, we posit a state of *distributional harmony* in which, other things being equal, the expected distribution of accounting policy choices is the same in each country. In this theoretical state, the odds of selecting a given accounting method from those available for a particular financial statement item are identical for each country. A major advantage of this benchmark is that it provides a basis for distinguishing between two possibly conflicting components of the international harmonization process: between-country harmonization and within-country standardization.

A hierarchy of nested statistical models is then used to describe accounting policy choices made by companies with an international shareholding and registered in Europe, where the European Union has been involved in a program of accounting harmonization. The accounting

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The authors are grateful to Jean-Bruno Dufour and Wolfgang Dick for their research assistance, to the Institute of Chartered Accountants in England and Wales for financial support provided during the first phase of this project and to Groupe ESCP for financial support during the second phase. The authors also wish to acknowledge the useful comments made by participants at the following conferences where an earlier version of the paper was presented: British Accounting Association, April 1994; European Accounting Association, April 1994; University of Wales Gregynog Colloquium, May 1994; Association Française de Comptabilité, June 1994.

policies analysed in depth in this article comprise the treatment of goodwill and accounting for deferred taxation. The results are compared with the comparability index method used previously in harmonization research studies.

Key words: Accounting policies; Deferred taxation; Goodwill; Harmonization; Standardization.

INTRODUCTION

The literature on the measurement of international accounting harmonization has focused almost exclusively on the use of index measures. In the first published paper on this subject, van der Tas (1988) considered a concentration index approach (the H index), derived from the Hirschman–Herfindal index of industrial concentration, before developing his own comparability index (the C index). We have discussed the mathematics of the comparability index elsewhere (Archer, Delvaille and McLeay 1995), and some further reference to the C index will also be made below. The aim of this article, however, is to present a method of modelling statistically the process of international accounting harmonization which, we believe, provides a richer insight into that process than the use of index measures.

The possibility of a statistical modelling approach is hinted at by Tay and Parker (1990, p. 85), in the context of a discussion in *Abacus* concerning the measurement of harmonization (see Tay and Parker, [illegible], van der Tas, 1992a, 1992b, 1992c). They suggest that the level of harmony in the accounting practices adopted by companies in different countries may be assessed for a particular financial statement item by comparing 'the observed distribution of companies between different methods with either a random distribution or some expected distribution', and that a suitable representation of a random distribution could be 'a distribution in which equal numbers of companies would be expected to use each of the available alternatives'. Given this approach, Tay and Parker propose that 'evidence of harmony would then be the existence of a significant difference between the observed and expected distributions, as measured by some appropriate significance test, for example chi-square'.

In this article, we show how the difference between the observed frequencies of accounting policy choices and the outcome of a process of random choice can be fully explained by means of a statistical model. In so doing, we describe harmonization in a way that allows us to identify those departures from random, or equiprobable,[1] accounting policy choice which are associated with either national standardization or international harmonization, or which are company-specific.

The notion of harmony, as normally understood in the literature, is such that the process of harmonization will lead to a situation of maximum harmony with respect to a particular financial statement item when all companies in all countries use the same accounting method. This notion ignores the possibility that companies may be subject to different circumstances which arguably justify the use of correspondingly different accounting methods in respect of that item.[2] The approach envisaged in this article is based on the assumption that different commercial circumstances do indeed motivate the choice of different accounting methods. This implies an alternative notion of international harmony. According to this notion, a state of international harmony exists when, other things being equal, the odds of selecting a given accounting method are identical in each country. Hence, our statistical modelling approach incorporates a theoretical state of affairs which may be termed *distributional harmony*, and which allows measurement of the extent to which distributions of accounting policy choices are similar between countries.

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[1] If an accounting policy choice is made by selecting an accounting method from those available by means of a random process, then each available method has an equal chance of selection, and the expected distribution of accounting policy choices will be an equiprobable, or uniform, distribution.

We develop these ideas in the context of a hierarchy of nested statistical models based on logistic Poisson regression. These provide a description of (a) systematic effects of harmonization, (b) systematic divergence from a state of international harmony, and (c) non-systematic accounting policy choices made by individual companies.

The method is illustrated by an analysis of corporate accounting policy choices carried out during the period subsequent to the original empirical study (van der Tas, 1988) which prompted the debate in *Abacus*. The accounting policies analysed in depth here are the treatment of goodwill and accounting for deferred taxation. The companies in our sample are based in Belgium, France, Germany, Ireland, the Netherlands and the U.K., where the process of harmonization in the European Union is likely to have had an effect, and also Sweden and Switzerland where the accounting practices of multinational companies have been influenced by the EU directives. The particular companies in the sample are interlisted within Europe and are likely to be the focus of attention of financial analysts carrying out international comparisons.

In this article, we also reconcile our results with the indexation approach proposed by van der Tas (1988) and extended in Archer *et al.* (1995), and for this purpose we separate the comparability index, or C index, into two components relating to the within-country (intra-national) effects of domestic standardization and the between-country (inter-national) effects of harmonization. We show that the expected values from our model of harmonization, a model in which there are no country-specific or company-specific accounting policy choices, yield the same C index value overall as the observed data, and that it is the within-country and between-country components of the index which reflect the divergence from harmony caused by differing national standards and company-specific policy choices.

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[2] One fairly obvious set of different circumstances is membership of different industries. Thus, for example, real estate companies might arguably be justified in treating buildings held as investments in a similar way to financial investments rather than as tangible fixed assets subject to systematic depreciation. Similarly, there may also be size effects. For example, smaller oil and gas extraction companies may choose the full cost method of accounting for hydrocarbon reserves, while the larger companies choose the successful efforts method.

STATISTICAL MODELLING OF HARMONIZATION

Using a numerical example, this section develops the idea of a hierarchical sequence of statistical models to describe the harmonization process. A three-dimensional array in Table 1 shows for each year the number of companies in each country selecting each accounting method, cross-classified in this case for two years, two countries and three accounting methods.

TABLE 1

AN ILLUSTRATION OF POLICY CHOICES IN TWO PERIODS

	Year $k = 1$				Year $k = 2$				Combined			
Method	$j = 1$	$j = 2$	$j = 3$	Total	$j = 1$	$j = 2$	$j = 3$	Total	$j = 1$	$j = 2$	$j = 3$	Total
Country												
$i = 1$	51	61	38	150	19	169	12	200	70	230	50	350
$i = 2$	99	89	112	300	41	311	48	400	140	400	160	700
Total	150	150	150	450	60	480	60	600	210	630	210	1050

We increase the number of companies from 450 in year 1 to 600 in year 2 in order to demonstrate the functioning of the model with respect to such changes. It can be seen that, for the two countries combined, the distribution of accounting policy choices has changed from a uniform distribution in year 1 (33% : 33% : 33%) to a high degree of convergence in year 2 on method 2, the generally accepted practice adopted by 80 per cent of companies. It will be noted, however, that the aggregate frequencies in each of the two periods do not fit the individual *country* subsamples precisely.

The aim of the statistical model is to estimate from the observed patterns of policy choices the extent to which the changes may be attributed to a process of international harmonization rather than to behaviour that is specific to individual countries or companies. In order to develop a sequence of models which describe this kind of data adequately, we may generalize by letting x_{ijk} be the observed number of companies in the ith country selecting the jth accounting method in the kth year, where $i = 1, ..., I$ countries; $j = 1, ..., J$ methods; and $k = 1, ..., K$ years. The marginal totals are summed over the subscripts by replacing the relevant subscript with '+'. Thus, x_{+12} is the total number of companies selecting method $j = 1$ in year $k = 2$. The corresponding notation for the three-dimensional array of observed counts and the relevant marginal totals is set out in Table 2 giving, first, the general notation for an $I \times J \times K$ table and, second, the specific notation for a $2 \times 3 \times 2$ table.

The probability of a count falling in cell (ijk) is p_{ijk} and the corresponding expected value will be denoted as m_{ijk}. An estimate $\hat{m}_{ijk}$ of the expected value is obtained by multiplying the grand total x_{+++} by the estimated probability, $\hat{p}_{ijk}$, where the latter is estimated from the relationships between marginal totals that vary depending on the level of the model.

TABLE 2

$I \times J \times K$ ARRAY BY COUNTRY, ACCOUNTING METHOD AND YEAR

	Year $k=1$				Year $k=2$				Combined			
Method	$j=1$	$j=2$	$j=3$	Total	$j=1$	$j=2$	$j=3$	Total	$j=1$	$j=2$	$j=3$	Total
Country												
$i=1$	x_{ijk}	x_{ijk}	x_{ijk}	x_{i+k}	x_{ijk}	x_{ijk}	x_{ijk}	x_{i+k}	x_{ij+}	x_{ij+}	x_{ij+}	x_{i++}
$i=2$	x_{ijk}	x_{ijk}	x_{ijk}	x_{i+k}	x_{ijk}	x_{ijk}	x_{ijk}	x_{i+k}	x_{ij+}	x_{ij+}	x_{ij+}	x_{i++}
Total	x_{+jk}	x_{+jk}	x_{+jk}	x_{++k}	x_{+jk}	x_{+jk}	x_{+jk}	x_{++k}	x_{+j+}	x_{+j+}	x_{+j+}	x_{+++}
	Year $k=1$				Year $k=2$				Combined			
Method	$j=1$	$j=2$	$j=3$	Total	$j=1$	$j=2$	$j=3$	Total	$j=1$	$j=2$	$j=3$	Total
Country												
$i=1$	x_{111}	x_{121}	x_{131}	x_{1+1}	x_{112}	x_{122}	x_{132}	x_{1+2}	x_{11+}	x_{12+}	x_{13+}	x_{1++}
$i=2$	x_{211}	x_{221}	x_{231}	x_{2+1}	x_{212}	x_{222}	x_{232}	x_{2+2}	x_{21+}	x_{22+}	x_{23+}	x_{2++}
Total	x_{+11}	x_{+21}	x_{+31}	x_{++1}	x_{+12}	x_{+22}	x_{+32}	x_{++2}	x_{+1+}	x_{+2+}	x_{+3+}	x_{+++}

A suitable probability model for count data in the context of multicategory response such as multiple accounting choices is provided by the Poisson distribution. This distribution can take any non-negative integral value and may be used to describe the number of events (i.e., companies making accounting policy choices) which have occurred in a given period of time or in a given space, although no *a priori* knowledge of the total number of observations is assumed. However, a restriction may be imposed whereby the total sample size is fixed and, if the x_{ijk}s have been generated according to a Poisson sampling scheme, then the conditional distribution is multinomial, with the probability function as given in Bishop *et al.* (1975).[3] Further discussion of the relevant sampling scheme for cross-classified data is to be found in Fienberg (1977) and, with respect to measurements repeated through time, in Lindsey (1993).

When a Poisson-distributed error term is linked to a multinomial logistic regression, we may estimate simultaneously the probabilities, the p_{ijk}s, for the type of cross-classified categorical data dealt with in this article As closed-form solutions are not feasible for all levels of three-way interaction models with multiple responses, the estimation of the expected values, the m_{ijk}s, may be achieved by fitting parameters from a generalized linear model for the complete cross-classification by explanatory variable using iterative proportional fitting (Aitken *et al.*, 1989). In this article, the analysis was carried out using the generalized linear modelling system GLIM4 (Francis *et al.*, 1993).

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[3] For a three-dimensional table with observed cell counts x_{ijk}, and $n = x_{+++}$, the probability function for the multinomial model is $\Pi \left((m_{ijk}/m_{+++}) x_{ijk} \right) (x_{+++}!/\Pi x_{ijk}!)$

Model 1: Complete Independence

For the model of complete independence, the expected value of accounting policy choices is equal in each cell, regardless of country or year.[4] However, when subsamples are unbalanced because there are different numbers of observations in each country and/or in each year, the model of complete independence has no descriptive validity, and the appropriate model of independence is one which reflects the sampling design, as below.

Model 2: Conditional Independence

For a population of company financial disclosures, the number of disclosing companies may vary as a result of population differences between countries and as a result of changes in the population of companies from one time period to another. This may be reflected in sampling design. Furthermore, if non-disclosure is not considered as one of the choices and, as a result, statistical modelling is restricted to accounting policy choices only, this may also cause variation in the country and year subsamples for the reduced set of data. The second model, the model of conditional independence, reflects these constraints imposed by sampling design.

As the model of conditional independence provides estimates of the effects associated with the numbers of observations by country and by year, the components of the model are a country factor (C), a year factor (Y) and the second-order interactions between countries and years ($C.Y$). The linear model of conditional independence is, therefore, denoted as

$$C + Y + C.Y \text{ (or, more succinctly, } C{*}Y\text{)}$$

where . represents the interaction between main effects, and $*$ indicates the inclusion of both main effects and interaction effects.[5]

For the example, the two-level country factor measures the relative odds of a company belonging to country 1 or country 2. Given the marginal totals indicated in Table 1 above, the relative odds of a company being in country 1 are $x_{1++}{:}x_{2++} = 350{:}700$, or 1:2. Likewise, the two-level year factor is described by the odds ratio $x_{++1}{:}x_{++2}$ which, using the marginal totals in Table 1, gives the relative odds of an observation falling in year 1 as 450:600, or 3 : 4. From the logistic regression, we obtain each of these parameter estimates as a logit, that is, the logarithm of the relative odds ratio.

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[4] In this case, the expected value is the grand mean (the only parameter in the model), where the total number of repeated observations, Σx_{ijk}, is divided by the number of cross-classifications from I policy choices in J countries over K years (for the example, the expected value in each cell would be given by x_{+++}/IJK or $105/(2 \times 3 \times 2)$, which is equal to 8.75).

[5] A corresponding algebraic representation of the linear structure is

$$\beta_o + \beta_i^{C} + \beta_k^{Y} + \beta_{ik}^{C.Y}$$

with levels $i = 1, ..., I$ of the country variable and $k = 1, ..., K$ of the year variable, where main effects allow the intercepts to vary and the interaction term allows the slopes to vary for all levels of C and Y. A useful introduction to the structure of generalized linear models is provided in Dobson (1990).

Under this model, $C{*}Y$, the estimated probability $\hat{p}_{ijk}$ of a count falling in cell (ijk) is equal to $(x_{i+k}/x_{+++})/\mathrm{J}$, where J is the total number of methods.[6] For the model of conditional independence (and all higher-order models), the estimate $\hat{m}_{i+k}$ of the expected marginal count for each country in each year is equal to the observed marginal count x_{i+k}. However, for this model, the estimated marginal count for each method $\hat{m}_{+jk}$ is equal to x_{++k}/J, and not to the observed value. The expected values for the example are given in Table 3.

TABLE 3

EXPECTED VALUES UNDER CONDITIONAL INDEPENDENCE

	Year $k=1$				Year $k=2$				Combined			
Method	$j=1$	$j=2$	$j=3$	Total	$j=1$	$j=2$	$j=3$	Total	$j=1$	$j=2$	$j=3$	Total
Country												
$i=1$	50	50	50	*150*	67	67	67	*200*	117	117	117	*350*
$i=2$	100	100	100	*300*	133	133	133	*400*	233	233	233	*700*
Total	150	150	150	*450*	200	200	200	*600*	350	350	350	*1050*

Note: In this table, expected values are rounded to the nearest integer. Furthermore, in this table and those that follow, expected values which are equal to the observed data are given in italics.

The model of conditional independence reproduces the situation where the selection of an accounting method for a financial statement item from among the various possible methods is entirely random and where each of the possible methods thus has an equal chance of being used. We refer to this model as being one of *conditional* independence, since the expected number of companies selecting a particular method in a given country in a given year is conditional only on the total number of companies in that country sample for that year.[7]

We may consider model 2 to be the null model. By adding further terms, we are able to account for systematic effects relating to changes in policy choices. At subsequent levels of the model hierarchy, the increase in the goodness of fit that is achieved is divided through by the number of degrees of freedom lost by adding parameters to the model, thus providing the basis for tests of the usefulness of the additional parameters in the model. The inferential procedures are described in greater detail later in this section.

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[6] With regard to the $C.Y$ interaction effects, the logistic parameter values would differ from 0 (and, accordingly, the exponentiated odds ratios would differ from 1) if there were any differences between countries in the proportionate change in sample size from one period to another. In the case of the above example, for instance, the sample design is fully described by the C and Y main effects, and the $C.Y$ interaction effects are equal to zero.

[7] It may be noted that the benchmark of a 'uniform distribution' proposed by Tay and Parker (1990) relies implicitly upon a comparison of observed values with the expected values given by the basic model of conditional independence (model 2). An empirical study by Emenyonu and Gray (1992) bases its chi-square tests on a main effects model which is equivalent to our static model of harmony (model 3). As shown here, these approaches do not distinguish between the systematic effects of international harmony, the systematic effects of nationally generally accepted practices, and the non-systematic choices made by individual companies.

Model 3: The Static Model of Harmony

A situation of *distributional harmony* may be said to exist when accounting policy frequency distributions are identical across countries. When there is no harmonization between years, these frequency distributions also remain identical across years. That is, if we allow policy choices to depart from equiprobability and to vary overall, but not to depart from this pattern across countries, or from year to year, the resulting model describes the most likely pattern of policy choices in a state where there is an unchanging level of harmony for the period as a whole. This may be achieved by adding the three-level policy factor (P) to the model as a main effect, giving the following:

$$C + Y + P + C.Y \text{ (or } C_{*}Y + P).$$

As a result of adding policy main effects, the estimates of expected values are distributed over the policy choices in the proportions observed for total policy choices for all years combined, that is x_{+j+}/x_{+++}, a distribution which remains constant for each country and for each year. The expected values from the static model of harmony for the example, which follow the pattern 1:3:1 throughout, are shown in Table 4.

TABLE 4

EXPECTED VALUES FROM THE STATIC MODEL OF HARMONY

	Year $k=1$				Year $k=2$				Combined			
Method	$j=1$	$j=2$	$j=3$	Total	$j=1$	$j=2$	$j=3$	Total	$j=1$	$j=2$	$j=3$	Total
Country												
$i=1$	30	90	30	*150*	40	120	40	*200*	70	210	70	*350*
$i=2$	60	180	60	*300*	80	240	80	*400*	140	420	140	*700*
Total	90	270	90	*450*	120	360	120	*600*	*210*	*630*	*210*	*1050*

Under this model, the estimated probability $\hat{p}_{ijk}$ of a count falling in cell ijk is equal to $(x_{i+k}/x_{+++}) * x_{+j+}/x_{+++})$. For example, for the first accounting method in the first country in the first year, our probability estimate $\hat{p}_{111}$ is equal to

$$\frac{x_{1+1}}{x_{+++}} * \frac{x_{+1+}}{x_{+++}} = \frac{150}{1050} * \frac{210}{1050} = \frac{1}{35} = 0.0286$$

and the estimated expected value $\hat{m}_{111}$ is equal to $\hat{p}_{111} * x_{+++} = 30$.

Model 4: The Dynamic Model of Harmonization

If we allow policy choices to vary from year to year, but still not from country to country, the model describes the change in harmony from one period to the next. This is achieved by adding the interaction between years and policy choices (*Y.P*) to the model to give

$$C + Y + P + C.Y + Y.P \text{ (or } C{*}Y + Y{*}P\text{)}.$$

The *Y.P* interaction terms represent, for each policy, the change from one year to the next in the relative odds of it being selected. These changes are identified in this study as the *harmonization effects*. Hence, this model describes the level of harmony year by year, given the aggregate distribution of policy choices for all countries as observed in each year, and consequently the harmonization effect between years. Thus, if the data are such that the distribution of aggregate policy choices converges on a smaller number of generally accepted methods over time, this increase in harmony will be reflected in the better fit of model 4 (the dynamic model) compared to model 3 (the static model). In this case, the sign of the estimated parameter values for the *Y.P* interactions between years and policies would be positive. In the case of a reduction in harmony, the sign of the estimated parameter values for those *Y.P* interaction effects would be negative.

The expected values for the example are shown in Table 5. It can be seen that the estimated expected marginal counts of policy choices by year, $\hat{m}_{+jk}$, are equal to the observed marginals x_{+jk}, which was not the case with the previous model where the distributions were constant over time. Within each country and for each year, the distribution of expected values reflects the proportions of total policy choices for each year, and the estimated probability $\hat{p}_{ijk}$ of a count falling in cell *ijk* is equal to $(x_{i+k}/x_{+++}) * (x_{+jk}/x_{+++})$. For example, the probability estimate $\hat{p}_{111}$ is now equal to

$$\frac{x_{1+1}}{x_{+++}} * \frac{x_{+11}}{x_{++k}} = \frac{150}{1050} * \frac{150}{450} = \frac{1}{21} = 0.0476$$

and the estimated expected value $\hat{m}_{111}$ is equal to $\hat{p}_{111} * x_{+++} = 50$.

TABLE 5

EXPECTED VALUES FROM THE DYNAMIC MODEL OF HARMONIZATION

	Year $k=1$				Year $k=2$				Combined			
Method	$j=1$	$j=2$	$j=3$	Total	$j=1$	$j=2$	$j=3$	Total	$j=1$	$j=2$	$j=3$	Total
Country												
$i=1$	50	50	50	*150*	20	160	20	*200*	70	210	70	*350*
$i=2$	100	100	100	*300*	40	320	40	*400*	140	420	140	*700*
Total	*150*	*150*	*150*	*450*	*60*	*480*	*60*	*600*	*210*	*630*	*210*	*1050*

The paramaterization of model 4 may be compared instructively at this stage with that of the lower-order models 2 and 3 which, given that they contain a subset of its terms, are nested within model 4. The linear logits from each fit are given below and the corresponding exponentiated values are also listed:

	Model 2		Model 3		Model 4	
	(conditional independence)		(static harmony)		(dynamic harmonization)	
	logits	exponent	logits	exponent	logits	exponent
m_{111}	3.912	50.00	3.402	30.00	3.912	50.00
*C*2	+0.693	2.00	+0.693	2.00	+0.693	2.00
*Y*2	+0.288	1.33	+0.288	1.33	−0.916	0.40
*C*2.*Y*2	+0.000	1.00	+0.000	1.00	+0.000	1.00
*P*2			+1.099	3.00	+0.000	1.00
*P*3			+0.000	1.00	+0.000	1.00
*Y*2.*P*2					+2.079	8.00
*Y*2.*P*3					+0.000	1.00

As noted, the exponentiated parameter values are relative odds. An example of the computation of the linear predictor and the exponentiated expected value in the case of m_{222} is as follows:

	Model 2		Model 3		Model 4	
	logits	exponent	logits	exponent	logits	exponent
*m*111	3.912	50.00	3.402	30.00	3.912	50.00
*C*2	+0.693	*2.00	+0.693	*2.00	+0.693	*2.00
*Y*2	+0.288	*1.33	+0.288	*1.33	−0.916	*0.40
*C*2.*Y*2	+0.000	*1.00	+0.000	*1.00	+0.000	*1.00
*P*2			+1.099	*3.00	+0.000	*1.00
*Y*2.*P*2					+2.079	*8.00
m_{222}	4.893	133.33	5.482	240.00	5.768	320.00

For instance, for model 4, the odds of selecting method 2 rather than method 1 in the first year are evens (the exponent of P2 is equal to 1) while the relative odds of selecting the second method in the second year, as measured by the term Y2.P2, are 8:1

Model 5: The Full Model

The full second-order interaction model, model 5, allows policy choices to vary systematically from country to country from year to year. By adding the interactions between countries and policy choices (*C.P*), this model accounts for policy choices which depart from the overall pattern and are specific to individual countries. In other words, the increase of goodness of fit is attributable to the extent to which the distribution of national policy preferences differs from their distribution internationally. The components of the full model are

$$C + Y + P + C.Y + Y.P + C.P \text{ (or } C{*}Y + Y{*}P + C{*}P\text{).}$$

In this case, the probabilities are estimated using an iterative procedure. All expected marginal counts under model 5 are in agreement with observed marginals, now including $\hat{m}_{ij+} = x_{ij+}$, the sum over the years for each policy choice in each country. Thus, except for random variation attributable to non-systematic policy selection by individual companies, the full model is a perfect description of the data. The expected values for the full model applied to our example are given in Table 6.

TABLE 6

EXPECTED VALUES FROM THE FULL SECOND-ORDER INTERACTION MODEL

	Year $k = 1$				Year $k = 2$				Combined			
Method	$j = 1$	$j = 2$	$j = 3$	Total	$j = 1$	$j = 2$	$j = 3$	Total	$j = 1$	$j = 2$	$j = 3$	Total
Country												
$i = 1$	52	61	37	*150*	18	169	13	*200*	*70*	*230*	*50*	*350*
$i = 2$	98	89	113	*300*	42	311	47	*400*	*140*	*400*	*160*	*700*
Total	*150*	*150*	*150*	*450*	*60*	*480*	*60*	*600*	*210*	*630*	*210*	*1050*

Note: The expected values in this table are rounded to the nearest integer.

Model 5 is treated for all purposes in the following analysis as the full model, with all previous models being nested within it. The degrees of freedom for model 5 therefore provide the index for *F*-tests, as shown at the end of this description of the model hierarchy. The full model provides a description of systematic accounting policy choice, including effects of international harmonization (*Y.P*) and national standardization (*C.P*), the significance of each being reflected in the parameter estimates.

Model 6: The Saturated Model

Finally, by adding the three-way interaction effects (*C.Y.P*), which account for the residual random variation in the previous model, the data are fully saturated. This maximal model has the following structure

$$C + Y + P + C.Y = Y.P + C.P + C.Y.P \text{ (or } C{*}Y{*}P)$$

and fits expected values without error to the observed values, where $\hat{m}_{ijk} = x_{ijk}$. The sum of errors is therefore zero.[8] There are as many parameters as there are observations, and the degrees of freedom are consequently also zero. The difference between models 5 and 6 is attributable to those policy choices by companies which are not systematic, that is, they are described neither by international harmonization nor by national patterns of accounting policy choice.

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[8] In longer repeated measure studies, time (the variable *Y*) may be treated as continuous. This would add degrees of freedom to the analysis which may more than compensate for the loss in estimating accuracy and, if effective, could provide summary statistics for long-term harmonization effects described by the *Y.P* interaction — see model 4. It follows that model 6 would not necessarily fully saturate the data, leaving some residual error attributable to the smoothing of harmonization effects to a single slope parameter.

The hierarchical sequence of the models is summarised in Table 7.

TABLE 7

THE SEQUENCE OF NESTED HARMONIZATION MODELS

Model hierarchy, main effects and interaction effects	Description of models and effects
1 Grand mean	Model of complete independence
Add: Country$*$Year	Sample design effects
2 $(C*Y)$	Model of conditional independence
Add: Policy	Convergence effects
3 $(C*Y)+(P)$	Static model of harmony
Add: Year.Policy	Harmonization effects
4 $(C*Y)+(Y*P)$	Dynamic model of harmonization
Add: Country.Policy	Divergence effects
5 $(C*Y)+(Y*P)+(C*P)$	Full model
Add: three-way effects	Random company effects
6 $(C*Y*P)$	Saturated model

Measuring Goodness of Fit

The appropriate measure of goodness of fit for Poisson data is the log likelihood-ratio test statistic, referred to more generally as the deviance and calculated as the difference between the maximized log likelihoods for the fitted and saturated models, multiplied by –2. For the Normal model, the deviance is equal to the residual sum of squares, but in the case of the Poisson model it has an interpretation similar to that of the Pearson goodness of fit statistic (Francis *et al.*, 1993).

The relative goodness of fit of two nested models can be compared by examining the ratio of (a) the change in deviances from two models within the hierarchy divided by the change in degrees of freedom, to (b) the deviance for the full model (which we define as model 5 above, the model which reproduces all marginals exactly) divided by its degrees of freedom. That is, where the deviance of a higher-order model M_H is D_H on v_H degrees of freedom and the deviance of the lower-order model M_L containing a subset of the terms in model M_H is D_L on v_L degrees of freedom, and D_F is the deviance of the full model on v_F degrees of freedom, the ratio $[(D_L-D_H)/(v_L-v_H)]/(D_F/v_F)$ has an F-distribution on $(v_L-v_H), (v_F)$.[9]

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[9] The deviance is proportional to a χ^2 variable. It follows under certain general conditions that the difference between deviances is asymptotically χ^2 with degrees of freedom equal to the number of independent parameters that are omitted in fitting the nested model. The ratio of two χ^2s has an F-distribution which is indexed (v_L-v_H), (v_F), as shown in the text.

A small F-statistic indicates that model M_H and model M_L may not be distinguished, as the residual deviance for the reduced model M_L is not much larger than for model m_H. The F-statistic provides a likelihood ratio test of the hypothesis that the variables added to the model have zero regression coefficients and do not contribute to the regression function, in the first case with respect to the accurate model or, in the case of the alternative test described above, with respect to successive higher-order models.

Non-Disclosure

In some cases, a particular item may not be reported in a company's financial statements. A possible explanation may be that there were no transactions of the relevant kind, thus obviating the need for an accounting policy in that area. A further possibility is that there were such transactions but the company chose not to recognize the item for reporting purposes. Another possibility is that the item was reported, while the company provided insufficient information to allow the reader to determine the accounting method used. One explanation of this may be that the company in question considered that it did not need to disclose the accounting method used because it took the view that readers of its financial statements would be able to make an informed default assumption on the basis, for instance, that only one method is permitted by law in the company's country of registration. An alternative explanation is that the company may have decided not to report the method used even though no default assumption was applicable.

In the context of a statistical model, we may wish to treat such a decision process either as stochastic, where there is an element of choice by the company, or as non-stochastic. In the analysis carried out in this article, we were unable to make any default assumptions. Accordingly, we first treat non-disclosure as stochastic by assuming that such non-disclosure is one of the choices available to a company alongside the J accounting methods (i.e., given $J = 3$ methods, there would exist four choices including non-disclosure). We then compare the results of model-fitting under the above assumption with those obtained under the alternative assumption that non-disclosure is not a matter of choice since there had been no relevant transactions for the companies in question. This is achieved by weighting non-disclosures out of the generalized regression, thus restricting the estimation of expected values to the subset of companies selecting one or other of the J accounting methods.

COMPARABILITY INDICES

In this article we also compare our results with the comparability index introduced by van der Tas (1988). The C index is best interpreted as a model of interfirm comparison, as it measures for a single financial statement item the proportion of pairwise comparisons that are feasible given the alternative accounting methods adopted by different companies. Thus, it represents the probability that, for the item in question, two companies selected at random will report financial information that is comparable. Other things being equal, comparability increases when the choices made by companies converge towards a generally accepted method or when the number of accounting methods in use is reduced.

The C index may be constructed for each model from the expected marginal counts in any year k. In this context, the C index would measure the total number of expected pairwise comparisons given a particular model (obtained by summing over the alternative accounting methods the expected numbers of pairwise comparisons in each subset using the same accounting method) expressed as a proportion of the maximum number of pairwise comparisons that would be made if all companies were to use the same accounting method. The expected value of the C index is as follows:

$$\frac{\Sigma_j\,(m_{+jk}(m_{+jk}-1))}{m_{++k}\,(m_{++k}-1)}$$

where, for year k, m_{+jk} is the number of companies expected to select the jth method and m_{++k} is the total number of companies.[10]

For a given number of companies and a given number of different accounting methods for a particular financial statement item, the lowest level of comparability exists when the accounting methods are assumed to be selected with equal probability by companies.[11] Thus, the C index estimated from the model of conditional independence (model 2) is a measure of the minimum level of comparability for the sample, which converges each year on the reciprocal of the number of accounting methods, $1/J$, as sample size increases. The C index estimated from the static model of harmony (model 3) also remains constant through time as it measures the level of comparability that would exist in a state of unchanging distributional harmony. In contrast, the index value estimated from the expected values of the dynamic model of harmonization (model 4) varies over time as it measures the effects of harmonization on comparability.

The index values obtained for the example are given in Table 8. It can be seen that the minimum level of comparability with three methods is 33 per cent, the level estimated from the model of conditional independence. This would increase to a

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[10] The comparability index assumes that comparison occurs in pairwise combinations. The number of combinations of n companies taken r at a time is given by

$$\binom{n}{r} = \frac{n!}{(n-r)!\,r!}$$

For n companies, the number of permutations is factorial n, and the number of permutations of n companies taken r at a time is given by $n!/(n-r)!$ This simplifies to the second factorial $n\,(n-1)$ for pairwise permutations, and, to $\frac{1}{2}n(n-1)$ for pairwise combinations.

[11] For J accounting methods, we may substitute m_{++k}/J for m_{+jk} in this minimum comparability model. It follows that the minimum of the comparability index would be

$$\frac{J\left(\frac{m_{++k}}{J}\left(\frac{m_{++k}}{J}\right)-1\right)}{m_{++k}(m_{++k}-1)} = \frac{1}{J}\left(\frac{m_{++k}-J}{m_{++k}-1}\right)$$

which tends to $1/J$ as the number of companies m_{++k} increases. Thus, under the model of conditional independence, inter-company comparability is at its minimum level. Even a marginal change in the overall distribution of accounting choices will increase the level of comparability, as there will be a marginal preference for one method over the others.

TABLE 8

COMPARABILITY INDICES

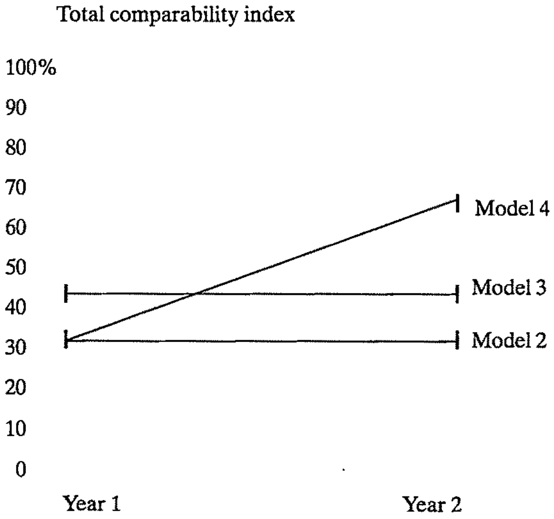
		Year 1	Year 2
Model 2	Conditional independence	33	33
Model 3	Static harmony	44	44
Model 4	Dynamic harmonization	33	66
Model 5	Full model	33	66
Model 6	Observed values	33	66

constant level of 44 per cent under the static model of harmony, where the distribution of policy choices remains unchanged from year to year. Allowing for harmonization, the C index increases from 33 per cent in year 1 to 66 per cent in year 2, as shown in Figure 1.

The C index values obtained from model 4 are equal to those obtained from models 5 and 6 (the full model and the saturated model), as all information required

FIGURE 1

COMPARABILITY INDICES



Key: Model 2 = Minimum comparability (conditional independence); Modal 3 = Harmony (static); Modal 4 = Harmonization (dynamic). Note that the total comparability index values are identical when estimated from the model of harmonization (model 4), the full model (model 5) and the actual data (observed values in the saturated model, model 6).

for the C index is accurately estimated by each of these models. It will be recalled that, in the earlier discussion of the sequence of nested models, the expected marginal counts were given as sufficient statistics whose accuracy increased for higher-order models. The equivalence between expected marginals and observed marginals may be summarized as follows:

Expected marginal	*Description of marginal*	*Models where expected marginal equals observed marginal*
m_{+++}	grand total	1,2,3,4,5,6
m_{i++}	counts in the *i*th country	2,3,4,5,6
m_{++k}	counts in the *k*th year	2,3,4,5,6
m_{i+k}	counts in the *i*th country in the *k*th year	2,3,4,5,6
m_{+j+}	counts of the *j*th policy choice	3,4,5,6
m_{+jk}	counts of the *j*th policy choice in the *k*th year	4,5,6
m_{ij+}	counts of the *j*th policy choice in the *i*th country	5,6

It can be seen that the expected number of companies selecting the *j*th accounting method in the *k*th year, m_{+jk}, is an accurate estimate in each of the higher-order models 4, 5 and 6.

It follows that the C index is not able to distinguish the within-country effects of national standardization that are allowed for in model 5 from the between-country effects of international harmonization in model 4, a feature of the C index which makes it deficient as a measure of international harmonization. Consequently, we also use in our analysis a within-country index of international comparability and between-country index of international comparability. The latter is a more appropriate index of international harmonization.

The number of pairwise comparisons that may be expected in the *i*th country amongst companies selecting the *j*th accounting method in the *k*th year is $\frac{1}{2}m_{ijk}(m_{ijk} - 1)$. Therefore, the expected total number of such within-country comparisons is given by summing over I countries and J methods. This is maximized for the *i*th country at $\frac{1}{2}m_{i+k}(m_{i+k} - 1)$ when all companies within that country use the same method. Thus, the within-country index for year k is given by

$$\frac{\Sigma_i \Sigma_j \left(m_{ijk}(m_{ijk}-1)\right)}{\Sigma_i \left(\mathrm{m}_{i+k}(\mathrm{m}_{i+k}-1)\right)}$$

Between-country comparability is based on the number of pairwise comparisons that may be expected between companies selecting the *j*th accounting method but operating in different countries. As the number of companies outside the *i*th country using the *j*th accounting method in the *k*th year is equal to $m_{+jk} - m_{ijk}$, it follows that between-country comparability index for year k may be expressed as

$$\frac{\Sigma_i \Sigma_j \left(m_{ijk}(m_{+jk}-m_{ijk})\right)}{\Sigma_i \left(m_{i+k}(m_{++k}-m_{i+k})\right)}$$

Finally, it should be noted that non-disclosure could influence the C index in a number of ways. If a company does not disclose a particular financial statement item because no such transactions took place, that company's accounts may be compared with those of all other companies, whichever method the other companies have adopted. If a company discloses a financial statement item but not the accounting method (which was referred to earlier as stochastic non-disclosure), comparison will not be possible with the accounts of other companies disclosing the item. In this article, we assume that all non-disclosures fall into the latter category and the comparability indices are calculated accordingly.

THE ANALYSIS OF ACCOUNTING PRACTICES

In this section, we describe how we analysed the accounting practices studied for the purpose of measuring the degree to which harmony existed in 1986/87 and 1990/91 and hence the process of harmonization (i.e., the change in harmony) between those years. For the sample on which our analysis is based, we selected from eight European countries those companies whose shares are traded internationally and which, therefore, are likely to be influenced by international factors, country-specific factors and company-specific factors in the selection of accounting methods. The companies were first selected in 1986 (see Archer, Dufour and McLeay 1989) and, for the purpose of this analysis, the financial statements of the same set of companies were reviewed again for the 1990 calendar year (or for accounting periods over 1990/91). The accounting policies considered are deferred taxation and goodwill, for which a more detailed description of the regulations and practices in each of the countries studied is given in Archer *et al.* (1995). Further discussion of financial reporting practices may be found in detailed studies of the countries involved: Belgium (Lefebvre and Flower, 1994), France (Scheid and Walton, 1992), Germany (Ordelheide and Pfaff, 1994), Ireland (Brennan *et al.*, 1992), the Netherlands (Dijksma and Hoogendoorn, 1993), Sweden (Heurlin and Peterssohn, 1995), Switzerland (Laffournier, 1995) and the United Kingdom (Gordon and Gray, 1994).

Deferred Taxation

The cross-classification of methods of tax accounting adopted by eighty-nine companies from eight countries in two separate periods 1986/87 and 1990/91 is set out in Table 9.

Overall, there was a decline in the number of companies using the taxes payable method and an increase in deferred tax accounting, in the cases of both the partial provision method and the full provision method. Nevertheless, non-disclosure remained a serious barrier to comparability. A substantial number of companies recognizing deferred tax did not disclose the deferred tax method used and a small number of companies not recognizing deferred tax did not indicate whether or not it was applicable. However, in both cases, the number of companies not disclosing sufficient information decreased.

The statistical analysis was carried out first for companies in all eight countries. Secondly, in order to exclude country–year and country–policy effects which could

TABLE 9

DEFERRED TAX CROSS-CLASSIFICATIONS

	1986/87						1990/91					
	Accounting method						Accounting method					
	A	B	C	D	E	Total	A	B	C	D	E	Total
Belgium	2	0	1	0	1	4	2	1	0	0	1	4
France	0	6	5	1	0	12	0	8	4	0	0	12
Germany	0	2	1	15	4	22	0	4	4	12	2	22
Ireland	0	0	3	0	1	4	1	0	3	0	0	4
Netherlands	0	6	2	4	0	12	0	6	1	4	1	12
Sweden	8	1	0	3	1	13	2	5	1	5	0	13
Switzerland	0	0	0	2	2	4	0	0	3	1	0	4
U.K.	0	0	18	0	0	18	0	0	18	0	0	18
Total	10	15	30	25	9	89	5	24	34	22	4	89

Key: A = Nil provision (taxes payable method); B = Full method; C = Partial method; D = Deferred tax recognized but method unspecified; E = No recognition of deferred tax and it is not known whether or not it is applicable.

not add significantly to explanation (due to the small number of observations), it was repeated for a subset that excluded the three smaller subsamples in Belgium, Ireland and Switzerland. The remaining five countries represent 87 per cent of the total sample.

With regard to policy choices, we treated the five categories A to E as stochastic in a first fit of the models and we repeated the procedures treating those companies which did not recognize deferred tax (category E) as non-stochastic. That is, in the latter cases, we assumed that selection was restricted to the four choices A to D.

A notable feature of the analysis reported in Table 10 is the small residual from the full model, attributable to random company effects. This has some influence on the F-tests of changes in goodness of fit with respect to the full model (reported as F_1 in Table 10), as explanations other than company-specific selection of accounting methods account for a high proportion of the deviance.

For the F_1 likelihood ratio test with respect to the full model, harmony (the addition of the policy choice main effect) and national divergence (the addition of the interaction between countries and policies) are both seen to be highly significant, with probabilities of a larger F-value being almost zero. Harmonization effects (the addition of the interaction between years and policies) are significant when the nuisance parameters associated with the small country samples are removed, as the p-value for the five-country analysis is reduced to 0.7 per cent. As recalled above, the F_1 test compares the harmonization effects with the impact of policy choices made by individual companies, of which relatively few are non-systematic. It can be seen that the reduction in deviance attributable to the systematic effects of harmonization is

TABLE 10

STATISTICAL ANALYSIS OF DEFERRED TAX HARMONIZATION

	Scope of stochastic model							
	All disclosures and non-disclosures				*Four main policy choices only*			
	Eight countries		Five countries		Eight countries		Five countries	
Models and effects	Deviance	*DF*	Deviance	*DF*	Deviance	*DF*	Deviance	*DF*
Null model	358.69	79	266.06	49	314.24	63	220.62	39
Country.Year	–60.91	–15	–9.86	–9	–64.71	–15	–7.13	–9
Conditional independence	297.78	64	256.20	40	249.53	48	213.49	30
Policy	–56.19	–4	–63.92	–4	–33.76	–3	–35.91	–3
F_1	*(19.07)*		*(33.38)*		*(16.75)*		*(41.28)*	
p	*(.000)*		*(.000)*		*(.000)*		*(.000)*	
F_2	*(3.49)*		*(2.99)*		*(2.35)*		*(1.82)*	
p	*(.012)*		*(.031)*		*(.085)*		*(.167)*	
Static harmony	241.59	60	192.28	36	215.77	45	177.58	27
Year.Policy	–6.21	–4	–6.23	–4	–4.09	–3	–5.69	–3
F_1	*(2.11)*		*(3.25)*		*(2.03)*		*(6.54)*	
p	*(.107)*		*(.039)*		*(.141)*		*(.007)*	
F_2	*(.369)*		*(.268)*		*(.271)*		*(.265)*	
p	*(.829)*		*(.896)*		*(.846)*		*(.850)*	
Dynamic harmonization	235.38	56	186.05	32	211.68	42	171.89	24
Country.Policy	–214.75	–28	–178.39	–16	–197.57	–21	–168.41	–12
$F_1 = F_2$	*(10.41)*		*(23.29)*		*(14.00)*		*(48.41)*	
p	*(.000)*		*(.000)*		*(.000)*		*(.000)*	
Full model	20.63	28	7.66	16	14.11	21	3.48	12
Random company effects	–20.63	–28	–7.66	–16	–14.11	–21	–3.48	–12

Notes:

1. Classification of policy variable
   Treated as stochastic in each analysis:
   A = Nil provision, or taxes payable approach
   B = Full provision
   C = Partial provision
   D = Deferred tax recognized but method unspecified

Treated as non-stochastic in the restricted analysis of four main policy choices:

E = No recognition of deferred tax, and it is not known whether or not deferred tax accounting is applicable

2. Countries included in each analysis: France, Germany, Netherlands, Sweden, U.K. Small samples included only in eight-country analysis: Belgium, Ireland, Switzerland.

3. The first *F*-test, F_1, compares the additional explanatory power of successive models with the random company effects, that is, it compares the reduction in deviance for successive models with the deviance after fitting the full model (model 5). The second *F*-test, F_2, compares the additional explanatory power of each model with the unexplained variation after fitting that model.

–5.69, compared to –3.48 for the non-systematic effects of company-specific accounting policy choice, suggesting that where companies departed from national preferences during the period investigated, they tended to select accounting policies which led to harmonization.

The F_2 test provides an alternative perspective on deferred tax accounting. Although some harmonization occurred during the period, as shown above, it did not have a significant effect on changing the level of harmony between the two years in question, as little explanatory power was offered by fitting the dynamic model instead of the static model.

Furthermore, a comparison of the model of conditional independence and the static model reveals that there was relatively little harmony when the model fit was restricted to the main policy choices only. The main characteristic of the data is the existence of national differences in deferred tax accounting. However, a stronger case that there is some harmony in tax accounting arises when non-disclosure, a decreasing practice, is treated as stochastic, with the low p-values of 1.2 per cent (eight countries) and 3.1 per cent (five countries) suggesting that the significant impact on harmonization has been greater disclosure.

As shown in Table 11, the parameter estimates obtained for all categories of policy choice when fitting model 4, the dynamic model of harmonization, indicate that there was during the test period a relatively high probability that companies would select

TABLE 11

PARAMETER ESTIMATES FOR DEFERRED TAX HARMONIZATION

	All countries		Five largest countries		EC countries	
	Policy effects	Year effects	Policy effects	Year effects	Policy effects	Year effects
A: Nil provision		–0.693		–1.386		+0.406
		(.881)		(.842)		(1.14)
B: Full method	+0.406	+1.163*	+0.629	+1.814*	+1.946*	–0.100
	(.408)	(.639)	(.437)	(.857)	(.755)	(.977)
C: Partial method	+1.099*	+0.818	+1.179*	+1.460	+2.708*	–0.406
	(.365)	(.602)	(.404)	(.836)	(.729)	(.948)
D: Method unspecified	+0.916*	+0.565	+1.056*	+1.295	+2.303*	–0.629
	(.374)	(.621)	(.410)	(.846)	(.741)	(.972)
E: Deferred tax not recognized	–0.105	–0.118	–0.470	+0.875	+1.099	–0.811
	(.459)	(.813)	(.570)	(1.08)	(.816)	(1.12)

Note: Parameter estimates are reported as log-relatives with respect to Policy A, and are not directly comparable between the full and reduced data sets. The boxed year-policy interaction effects are additive with respect to the main effects outside the box. The estimates are obtained by fitting model 4, the dynamic model of harmonization. The intercept estimate and the country effects are not included in the above table as they do not affect the interpretation of the policy, year and year–policy parameter values. Standard errors of log-adds are given in brackets and significant values are indicated with an asterisk.

the partial method or would choose not to disclose the method of deferred taxation used. The only change of any statistical significance concerns the increase in probability of selecting the full method. These inferences are unchanging under the full eight-country analysis and the restricted analysis of the five larger countries.

However, a further analysis restricted in this case to the EC countries in the sample (i.e., excluding Sweden and Switzerland), also reported in Table 11, reveals that the harmonizing effect with respect to the full method is no longer present to such a marked extent. This is because Swedish companies discontinued the use of the taxes payable method, with most of those disclosing the new policy indicating that the full method had been selected. Thus, we are able to conclude from results that have some statistical significance that an important harmonizing effect (although limited in its extent) had been the change in policy choice by European companies outside the EC at the time to one or other of the more generally accepted practices within the EC.

Nevertheless, this conclusion must be interpreted in the light of the main explanation arising from the F_2 test relating to the systematic behaviour of companies using methods that are widely adopted nationally but not internationally. All *p*-values reported in Table 10 for the comparison between dynamic harmonization and the full model (the difference being explained by country–policy effects) are virtually zero.

The conclusions reached above are reflected in the disclosure-adjusted comparability indices presented in Table 12 which have been constructed from the expected values given by each model for the eight-country analysis of all disclosures and non-disclosures. The financial statements of companies falling in categories D (deferred tax method unspecified) and E (not known whether deferred tax accounting is applicable) were treated as non-comparable with regard to deferred tax.

Constant comparability in a state of static harmony stands at 17.89 per cent overall, a low figure attributable in particular to the low levels of disclosure on average over the two periods about the method of deferred taxation used. The increase in disclosure from 1986/87 to 1990/91 and the greater use of deferred taxation brought about an increase in total comparability levels from 14.94 per cent

TABLE 12

DEFERRED TAXATION COMPARABILITY INDICES

	Within-country comparability		Between-country comparability		Total comparability	
	1986/87	1990/91	1986/87	1990/91	1986/87	1990/91
Conditional independence	8.51	8.51	12.00	12.00	11.46	11.46
Static harmony	14.96	14.96	18.44	18.44	17.89	17.89
Dynamic harmonization	12.10	18.65	15.47	22.18	14.94	21.63
Full model	35.07	38.09	11.21	18.58	14.94	21.63
Observed values	37.09	37.91	10.84	18.61	14.94	21.63

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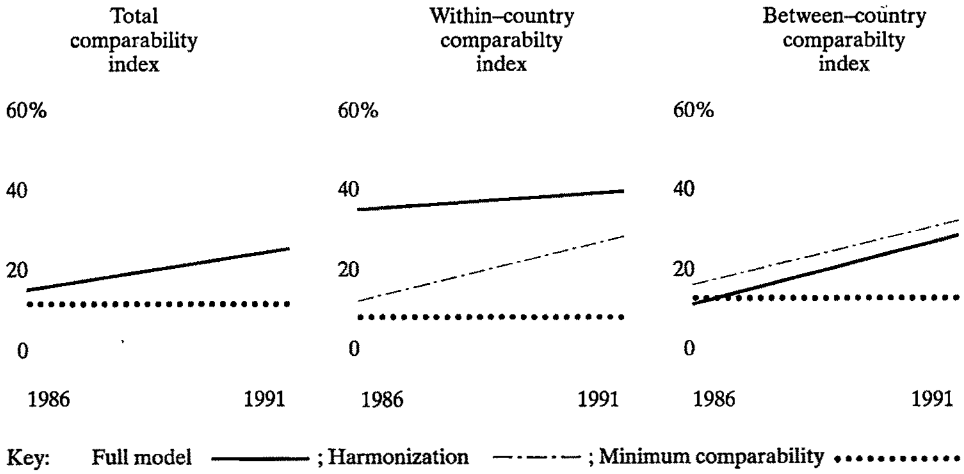
in 1986/87 to 21.63 per cent in 1990/91. As shown earlier in the article, these estimates of the total comparability index are equal under the dynamic model of harmonization, the full model and for the actual data.

Figure 2 shows the index values constructed from the fitted estimates under minimum comparability (model 2), dynamic harmonization (model 4) and the full model (model 5).

The measures of within-country and between-country comparability are greatly influenced by the national clustering of policy choices.[12] For instance, within-country comparability is substantially higher in both years when the expected index values from the full model, which allows for divergent country practices, are compared with those from the model of dynamic harmonization, which assumes distributional harmony. This is because a majority of disclosing companies in France, the Netherlands and Sweden use the full provision method (method B) while all British and Irish companies and the majority of Swiss companies use the partial provision method (method C). In contrast, the divergence from a harmonized state has an opposite effect on the expected between-country index values. For instance, the between-country index in 1990/91 stands at 22.18 per cent given the assumptions of distributional harmony compared to 18.58 per cent given the assumptions of systematic divergence from distributional harmony inherent in the full model.

FIGURE 2

DEFERRED TAXATION COMPARABILITY INDICES CONSTRUCTED FROM EXPECTED VALUES



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[12] The index values differ for within-country, between-country and total comparability due to sample design and index construction, as shown at the beginning of this article. There is also a differing proportional impact which can be seen in the relative index values from the dynamic harmonization and full models for within-country and between-country indices.

Finally, it may be noted that the non-systematic selection of deferred tax methods by individual companies has a negligible effect on comparability. The expected values of the between-country and within-country comparability indices obtained from the full second-order interaction model are similar to those obtained from the actual data.

Goodwill Arising on Consolidation

The cross-classification of goodwill accounting methods is given in Table 13. There was little change overall. Two German companies, which in 1986/87 were still using the method formerly adopted in Germany (method C, the capitalization of goodwill without subsequent amortization), abandoned that practice at a later date. We did not consider method C as equiprobable in either period of our study, and we treated the counts under method C as structural zeros for the purposes of stochastic analysis. In addition, we note that non-disclosure was not a serious problem in the case of goodwill.

TABLE 13

GOODWILL CROSS-CLASSIFICATIONS

	1986/87 Accounting method						1990/91 Accounting method					
	A	B	C	D	E	Total	A	B	C	D	E	Total
Belgium	0	0	0	4	0	4	0	0	0	4	0	4
France	0	1	0	11	0	12	0	1	0	11	0	12
Germany	3	10	2	6	1	22	0	11	0	8	3	22
Ireland	1	2	0	0	1	4	1	2	0	0	1	4
Netherlands	0	12	0	0	0	12	0	9	0	1	2	12
Sweden	1	2	0	10	0	13	0	4	0	9	0	13
Switzerland	0	0	0	2	2	4	0	2	0	2	0	4
U.K.	0	15	0	1	2	18	0	15	0	1	2	18
Total	5	42	2	34	6	89	1	44	0	36	8	89

Key: A = Written off against profit and loss account in the year of acquisition; B = Eliminated against reserves in the year of acquisition; C = Shown as an asset and not amortized; D = Shown as an asset and amortized through the profit and loss account over more than one year; E = Other or unspecified.

As previously, the statistical analysis was carried out for companies in all eight countries and also for a subset that might improve explanatory power by excluding the three smaller countries. With regard to policy choices, we first treated choices A, B, D and E as stochastic in the model fitting and then, in a second analysis, we treated as deterministic the behaviour of those companies which did not specify the method used,[13] thus restricting the estimation of fitted values to methods A, B and D. The results are summarized in Table 14.

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[13] This group also includes two companies which each used a different non-standard method. Due to the non-comparability of their financial statements with respect to the treatment of goodwill, these have been classified under E (other or unspecified) together with non-disclosers.

TABLE 14

STATISTICAL ANALYSIS OF GOODWILL HARMONIZATION

	Scope of stochastic model							
	Disclosures and non-disclosures				*Three main policy choices only*			
	Eight countries		Five countries		Eight countries		Five countries	
Models and effects	Deviance	*DF*	Deviance	*DF*	Deviance	*DF*	Deviance	*DF*
Null model	328.16	63	238.29	39	268.74	47	185.30	29
Country.Year	–60.92	–15	–9.87	–9	–58.73	–15	–6.05	–9
Conditional independence	267.24	48	228.42	30	210.01	32	179.25	20
Policy	–126.19	–3	–125.18	–3	–90.00	–2	–87.77	–2
F_1	*(63.14)*		*(111.0)*		*(91.57)*		*(146.3)*	
p	*(.000)*		*(.000)*		*(.000)*		*(.000)*	
F_2	*(13.42)*		*(10.91)*		*(11.25)*		*(8.64)*	
p	*(.000)*		*(.000)*		*(.000)*		*(.002)*	
Static harmony	141.05	45	103.24	27	120.01	30	91.48	18
Year.Policy	–3.24	–3	–7.19	–3	–3.02	–2	–5.59	–2
F_1	*(1.62)*		*(6.38)*		*(3.07)*		*(9.32)*	
p	*(.215)*		*(.008)*		*(.078)*		*(.008)*	
F_2	*(.329)*		*(.599)*		*(.361)*		*(.521)*	
p	*(.804)*		*(.622)*		*(.700)*		*(.604)*	
Dynamic harmonization	137.81	42	96.05	24	116.99	28	85.89	16
Country.Policy	–123.82	–21	–91.54	–12	–110.11	–14	–83.49	–8
$F_1 = F_2$	*(8.85)*		*(20.30)*		*(16.00)*		*(34.79)*	
p	*(.000)*		*(.000)*		*(.000)*		*(.000)*	
Full model	13.99	21	4.51	12	6.88	14	2.40	8
Random company effects	–13.99	–21	–4.51	–12	–6.88	–14	–2.40	–8

Notes:

1. Classification of policy variable

Treated as stochastic in each analysis:
A = Goodwill on consolidation is written off against profit and loss in the year of acquisition
B = Goodwill on consolidation is eliminated against reserves in the year of acquisition
D = Goodwill on consolidation is shown as an asset and amortized through the profit and loss account over more than one year

Treated as structural zero:
C = Goodwill on consolidation is shown as an asset and not amortized

Treated as non-stochastic in the restricted analysis of three main policy choices:
E = Other or unspecified

2. Countries included in each analysis: France, Germany, Netherlands, Sweden, U.K. Small samples included only in eight-country analysis: Belgium, Ireland, Switzerland.

3. The first F-test, F_1, compares the additional explanatory power of successive models with the random company effects, that is, it compares the reduction in deviance for successive models with the deviance after fitting the full model (model 5). The second F-test, F_2, compares the additional explanatory power of each model with the unexplained variation after fitting that model.

As in the case of deferred taxation, the analysis of goodwill accounting choices shows that policy main effects (i.e., static harmony) and country.policy interaction effects (i.e., divergence) account for most of the reduction in deviance in the full and restricted analyses. Accordingly, the F_1 and F_2 tests show that harmony was highly significant and that the nationally systematic behaviour of companies causing divergence from complete harmony was also highly significant.

Overall, there was little evidence that harmony increased during the period, with high p-values arising from the F_2 test which compares the deviances for the static and dynamic models. However, the F_1 test reveals (when calculated for the subset of five countries, thus removing the disturbance effects of the small subsamples) that harmonizing policy choices were significant by comparison with company-specific policy choices, suggesting that where companies departed from national preferences in goodwill accounting during the period investigated, they tended to select accounting policies which led to harmonization.

The parameter estimates obtained from fitting the dynamic model of harmonization confirm that there were no significant changes between 1986/87 and 1990/91 in the probability of selecting between the categories of policy choice. This applies to the analysis of the complete eight-country data set and to the reduced five-country set, and also to a further analysis of the countries in the EC at the time.

TABLE 15

PARAMETER ESTIMATES FOR GOODWILL HARMONIZATION

	All countries		Five largest countries		EC countries	
	Policy effects	Year effects	Policy effects	Year effects	Policy effects	Year effects
A: Written off against profit and loss		-1.386		-8.445		-1.609
		(1.31)		(20.7)		(1.29)
B: Eliminated against reserves	+2.303*	+1.335	+2.303*	+8.445	+2.128*	+1.656
	(.524)	(1.14)	(.524)	(20.7)	(.473)	(1.11)
C: Asset not amortized	+1.705*	+1.514	+1.946*	+8.514	+1.917*	+1.667
	(.544)	(1.16)	(.535)	(20.7)	(.479)	(1.12)
D: Asset amortized through profit and loss	-0.693	-5.094	-0.693	+0.693	-0.916	-5.548
	(.866)	(11.0)	(.866)	(29.3)	(.837)	(15.4)
E: Other or unspecified	+0.000	+2.079	-0.288	+9.292	+0.182	+1.897
	(.707)	(1.28)	(.764)	(20.7)	(.605)	(1.22)

Note: Parameter estimates are reported as log-relatives with respect to Policy A, and are not directly comparable between the full and reduced data sets. The boxed year-policy interaction effects are additive with respect to the main effects outside the box. The estimates are obtained by fitting model 4, the dynamic model of harmonization. The intercept estimate and the country effects are not included in the above table as they do not affect the interpretation of the policy, year and year–policy parameter values. Standard errors of log-adds are given in brackets and significant values are indicated with an asterisk.

Finally, disclosure-adjusted comparability indices were calculated using the expected values from each of the models. For this purpose, the non-comparability of companies in category E (other methods and methods not specified) was assumed.

TABLE 16

GOODWILL COMPARABILITY INDICES

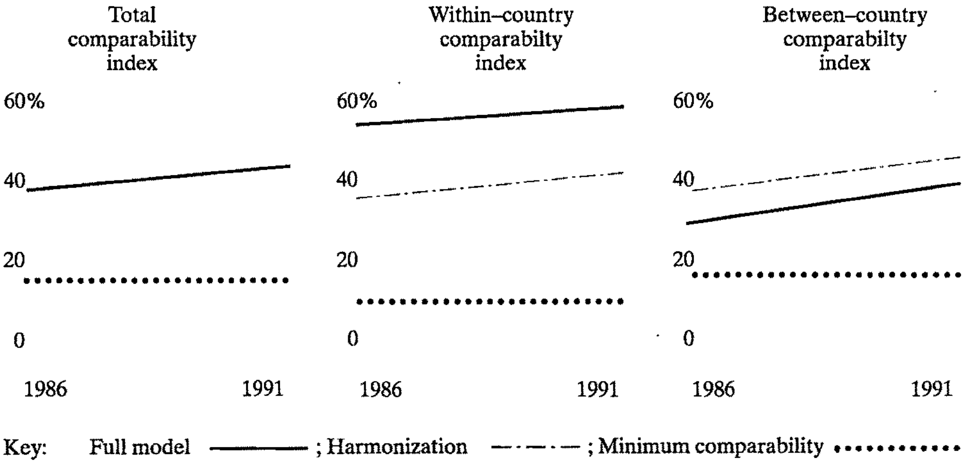
	Within-country comparability		Between-country comparability		Total comparability	
	1986/87	1990/91	1986/87	1990/91	1986/87	1990/91
Conditional independence	14.66	14.66	18.75	18.75	18.11	18.11
Static harmony	36.01	36.01	39.82	39.82	39.22	39.22
Dynamic harmonization	35.00	37.17	38.95	40.82	38.33	40.25
Full model	54.87	56.35	35.27	37.26	38.33	40.25
Observed values	58.17	53.92	34.66	37.71	38.33	40.25

Constant comparability in a state of static harmony stands at 39.22 per cent overall, a much higher level than in the case of deferred taxation. The near absence of harmonization effects is reflected in the index values given under the dynamic model of harmonization which changed little from 38.33 per cent in 1986/87 to 40.25 per cent in 1990/91 (see Table 16).

Again, within-country comparability is increased by the clustering of policy choices within countries, and between-country comparability is reduced accordingly, as illustrated by the relative positions of the lines representing the full model and the dynamic harmonization model in Figure 3. It can be seen from the cross-classifica-

FIGURE 3

GOODWILL COMPARABILITY INDICES CONSTRUCTED FROM EXPECTED VALUES



tions in Table 13 that most Dutch and British companies eliminated against reserves, most French and Swedish companies capitalized and then amortized through the profit and loss account, while the choices of German companies were mixed.

Finally, it may be noted that non-systematic choices by individual companies cause a noticeable change in the within-country comparability index based on observed values, which falls from 58.17 per cent in 1986/87 to 53.92 per cent in 1990/91.

CONCLUSIONS

In this article, we have shown how the measurement of harmonization over time can be analysed by means of a nested hierarchy of log-linear models. This hierarchy of models enables a distinction to be made between two sets of systematic effects: those which account for the level of international harmony (and the change in such levels through time which we have defined as international harmonization); and those systematic effects which account for international disharmony, which may be attributed to national differences in the distribution of accounting policy choices. In addition, the approach used permits the identification of any non-systematic policy choices by companies, that is, choices that are explained by neither international nor national patterns of choice and appear as residual values.

The models were fitted sequentially to the sample data, starting with a null model in which accounting policy choices are assumed to be random and, hence, equiprobable within each subsample for each country in each year. We then introduced the main policy effects, in which the frequencies of the policy choices for the total sample are assigned pro-rata to the country–year subsamples, so that neither the country nor the year affects the probabilities of the subsample policy choices.

The next step was to add the effect of changes in policy choices from year to year, but not from country to country. At this level, the model captures the process of harmonization at the international level, assuming that the distribution of policy choices is identical across countries in a given year but varying from year to year.

The final step was to add the interaction effect between countries and policy choices, to arrive at a full second-order interaction model, thus capturing the extent to which national standardization on different methods detracts from international harmonization. This full model provides a systematic statistical characterization of accounting policy choices, including the effects of both harmonization at the international level and differential standardization at the national level, the significance of each being reflected in its parameter estimates. The differences between the policy choices modelled in this full model and the actual data were the non-systematic or individualistic policy choices at the company level. For the samples considered in this article, such choices were unusual.

It was also shown how the goodness of fit of the model can be measured, and a test of significance for each step up the hierarchy can be applied by estimation of the relevant F-statistic.

We applied the hierarchy of models to two areas of accounting policy choice, deferred tax and consolidated goodwill. In each case, the full model was shown to capture the systematic policy choices reflected in the sample data very precisely and to reveal the small extent of harmonization, or change in harmony, during the period. In other words, neither individualistic policy choices, unsystematic in the sense of not being explained by either international harmony or differential national standardization, nor policy choices leading to an increase in the level of harmony, could be said to be common. This can be seen clearly in Figure 4, where the proportion of statistical variation attributable to each effect in the models is shown, based on the statistics reported earlier in Table 10 and Table 14.

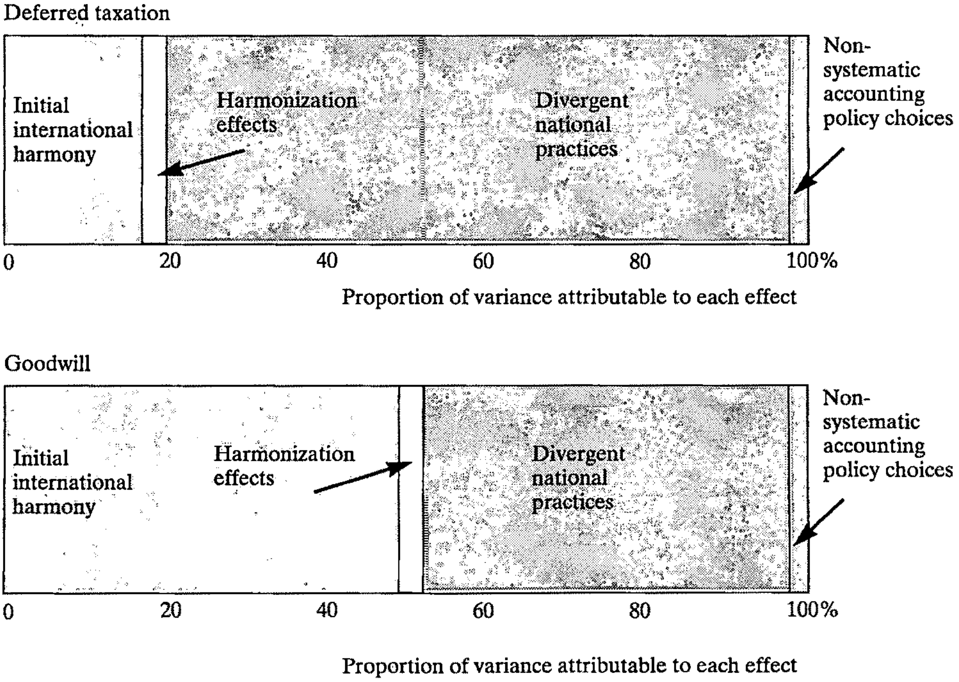
However, there was some evidence, when the analysis was restricted to the five largest country subsamples (France, Germany, the Netherlands, Sweden and the U.K.) and the variability attributable to company-specific choices fell even further, that when companies did select policies which were not in line with national practice this tended to have a positive but small harmonizing effect.

Our analysis indicates that, in the two areas of deferred taxation and consolidated goodwill, little progress in harmonization took place between 1986/87 and 1990/91, but that such progress as there was can be attributed to increases in between-country comparability, since the change in within-country comparability was either very small or negative.

The EU Directives have brought about a significant amount of *rapprochement* of

FIGURE 4

PROPORTION OF STATISTICAL VARIATION ATTRIBUTABLE TO EACH EFFECT



national accounting standards in Europe, not just in the member states but also in potential member states and other countries having close links with the EU. However, both deferred taxation and consolidated goodwill are areas where the EU Directives left considerable latitude to member states, and where national standards have continued in some cases to be somewhat flexible.

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ABACUS, Vol. 32, No. 1, 1996

CHRISTOPHER K. M. PONG AND GEOFFREY WHITTINGTON

The Withdrawal of Current Cost Accounting in the United Kingdom: A Study of the Accounting Standards Committee

Evidence from the archives of the U.K. Accounting Standards Committee (ASC) is used to trace the events leading to the withdrawal of the current cost accounting standard, SSAP 16, from 1980 to 1988. Three central issues are addressed. First, the ASC's role as a regulatory body is considered in the light of the failure to obtain compliance with SSAP 16 and to find an acceptable replacement. Second, the decline in support for SSAP 16 is explained in terms of changes in the economic environment. Third, the roles of different interest groups in the process are analysed.

Key words: Accounting standards; Current cost accounting; Inflation accounting; Regulation.

This article addresses the events leading to the withdrawal of SSAP 16, the current cost accounting (CCA) standard issued by the Accounting Standards Committee (ASC) in 1980. The main objective is to describe and explain how the ASC functioned in its capacity as a private sector regulator of accounting standards. The main source of evidence used is the ASC archive, now kept at the University of Manchester, and described in Skerratt and Howlin (1993). The archive comprises the agendas, supporting papers and minutes of the ASC and reports and papers of its working parties. It therefore provides an internal 'ASC view' of events, but this is a view which is highly relevant to understanding the ASC's mode of operation and the difficulties which it encountered.

The withdrawal of SSAP 16 constituted a major challenge to the ASC's authority and its ability to form a coherent policy when under pressure from its constituency. The resulting lack of confidence within the ASC undoubtedly contributed to the subsequent decision by its sponsoring body, the Consultative Committee of Accountancy Bodies (CCAB) to appoint the Dearing Committee, whose report (1989) led to the replacement of the ASC by a new body, with greater independence

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The research was carried out at the Department of Applied Economics, Cambridge, with the assistance of a grant from the Economic and Social Research Council (Award No. L-102-25-1007).

from the accounting profession and greater powers. For this reason, and because of the nature of our evidence, our analysis and conclusions concentrate on the functioning of the ASC. There are, however, two significant subplots. First, we examine the changes in the economic environment which led to a general decline in support for SSAP 16. Second, we explore the roles of particular interest groups in the work of the ASC, and in responding to the abortive exposure drafts, ED 35 (ASC, 1984a) and ED 38 (ASC, 1985). Our conclusion is that the ASC's lack of independent authority made it impossible for it to continue to impose a form of CCA in the face of overwhelming opposition from preparers of accounts. The ASB, which replaced the ASC, does have greater independent authority. However, it still faces some serious difficulties which were apparent in the debate on SSAP 16. These are summarized in the final section of the paper.

First, this article briefly considers the history and constitution of the ASC, followed by the history of SSAP 16. It then analyses the economic circumstances surrounding its decline in support and ultimate withdrawal. The evidence from the ASC archives is used to describe, stage-by-stage, from the monitoring period onwards, how the ASC developed its policy towards SSAP 16 and its possible replacements. In this part of the article a straightforward narrative is used, with sufficient evidence to enable the reader to assess the validity of our subsequent interpretation. The interpretation appears in the final sections, in which we draw conclusions about the authority and independence of the ASC, the extent to which these were constrained by its constitution, and the continuing pressures on the standard-setting process.

BACKGROUND: THE ASC

The ASC was founded in 1970 as the Accounting Standards Steering Committee and changed its name when further professional bodies joined its sponsoring body, the Consultative Committee of Accountancy Bodies (CCAB) in 1975. It was a private sector venture, sponsored and supported by the six leading accountancy bodies in the U.K. and the Irish Republic: the three chartered institutes (England and Wales, Scotland and Ireland, ICAEW, ICAS and ICAI), the certified institute (ACCA, now CACA), the management institute (now CIMA) and the public sector accounting institute (now CIPFA). Its members were volunteers drawn largely from these professional bodies and dominated by accountants in public practice, the chairman being invariably a distinguished practitioner. The only direct sanction which it could levy against those who did not comply with its standards was the professional discipline of its sponsor bodies, the CCAB members, each of which gave individual approval to every standard before it could be issued. Arguably, it derived authority indirectly through the *Companies Act* requirements that accounts should present a true and fair view: counsel's opinion obtained during the debate on SSAP 16 (the Hoffman–Arden Opinion) suggested that 'a SSAP . . . is likely to have an indirect effect on the content which the courts will give to the "true and fair" concept' (Hoffman and Arden, 1983). In the case of listed companies, it might also hope for the support of the Stock Exchange, which prescribed financial reporting requirements in its listing agreement, although in practice the Stock Exchange was not vigorous in its enforcement of such requirements in the context of current cost accounting (Lemke and Page, 1992, p. 88).

In view of this relatively slender authority and voluntary private sector constitution, the ASC's achievements were considerable,[1] and it is not the object of this article to belittle these achievements. The objective is rather to explore the difficulties with which the ASC had to contend. These can be summarized under two headings: authority and independence.

Reference to authority has already been made. Lacking formal authority, the ASC had to persuade its constituency, particulary the preparers of accounts, to cooperate. By independence we mean the ASC could not take independent action which would not be accepted by preparers of accounts without risking total loss of cooperation. However, independence has another dimension. The sponsors of the ASC were the professional bodies, which vetted every standard, and these were dominated by practising auditors. The ASC was constrained both by preparers of accounts and those who audited them. It was thus bound to have difficulties in meeting the needs of users of accounts, or of some broader public interest, if these conflicted with the interests of auditors and preparers.

These pressures eventually led to the ASC being replaced by the Accounting Standards Board (ASB) in 1990, following the Dearing Report (1988). The ASB has a greater degree of authority, derived from the *Companies Act* 1989, and it also has a greater degree of independence, which is ensured by its accountability to the broadly based Financial Reporting Council (FRC) rather than the professionally based CCAB. There were two notable issues which, in particular, drew attention to the ASC's constraints. One of these was the price change accounting debate, which ran through most of the ASC's existence and culminated in the controversies discussed in this article. The other was that of creative accounting which emerged towards the end of the ASC's life and threatened to pose equally intractable controversies.

SSAP 16: ORIGINS AND DOWNFALL

Origins

SSAP 16, published in March 1980, was the outcome of a long, tortuous and sometimes heated debate lasting more than ten years, in which professional bodies, the ASC and the government (in the Sandilands Report, 1975) had all participated. This debate has been surveyed by Tweedie and Whittington (1984, particulary chapters 4, 5 and 6) and, from an ASC perspective, by Westwick (1980), who acted as secretary of the Inflation Accounting Steering Group.

Given its controversial origins, it was inevitable that SSAP 16 bore the marks of compromise in some important respects. In particular, it required current cost disclosure either as the basis of the main accounts (as required by the Sandilands Report and the ASC's unsuccessful exposure draft ED 18, 1976) or as supplementary disclosure (as in the ASC's more successful Hyde Guidelines, 1977, and ED 24, (1979). Another important compromise, which was particulary controversial, was the use of the gearing adjustment to deal with the inflationary gain on long-term borrowing, and the monetary working capital adjustment, to deal with the inflationary loss on holding current working capital assets of fixed monetary value. These adjustments used specific price indices (as in measuring the current cost of physical assets) rather than a general price index, which might have had greater intuitive appeal. A third important compromise was on scope of application. The principle of universality of application (as favoured by Sandilands and ED 18) was rejected in favour of application to larger business entities, by the use of a size test.[2]

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[1] See, for example, Hanson (1989), which surveys developments in financial reporting practice over nearly two decades of the ASC's existence.

When SSAP 16 was issued, the ASC recognized the extent of the compromise and the experimental nature of the proposals by setting up a monitoring committee, the Inflation Accounting Sub-Committee (IAS), which was required to evaluate the implementation of SSAP 16 and to prepare for the ASC any proposals for amendment to the standard which seemed to be needed, with a view to exposure before the end of 1984. In the meantime, it was stated that SSAP 16 should be allowed an initial trial period of three years in which it could be tested without amendment. This raised expectations in some quarters that SSAP 16 was intended to apply for only three years, although the ASC hoped that it would remain in place for much longer and would require only minimal amendment.

Downfall

SSAP 16 initially seemed to be a great success: Table 1 shows that in 1981/82 it achieved a 95 per cent compliance rate amongst the 300 companies covered by the annual survey of U.K. published accounts (Gray and Berry, 1982). However, compliance subsequently fell rapidly and in 1985 SSAP 16 was made non-mandatory, being finally withdrawn in 1988. It is tempting, with hindsight, to blame this failure on the compromises and underlying tensions inherent in SSAP 16, and on a possible tactical error by the ASC in immediately setting up the IAS monitoring group and giving the impression that SSAP 16 was intended merely to be a three-year experiment. However, such an interpretation of events would be superficial: the compromises in SSAP 16 were the result of fundamental conflicts of interest or belief which would have remained whatever the contents of the standard. Moreover, the subsequent decline in support for the standard was due largely to forces in the environment which were outside the ASC's control. These forces were apparent in many other countries, and accounting for the effects of changing prices had declining fortunes internationally in the 1980s: for example the U.S.A.'s FAS 33 was withdrawn in 1987.

The most obvious and pervasive of these forces was the decline in the rate of inflation. The relevance and potential benefits of a system of price change accounting are likely to increase as the rate of price changes increases. Hence, as Mumford

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[2] Application was to all companies listed on the Stock Exchange and other large entities, where large implied annual turnover not less than £5 million, total assets not less than £2.5 million, *and* an average number of employees not less than 250.

TABLE 1

INFLATION RATES, COMPLIANCE RATES AND PRICE LEVEL EVENTS FOR THE YEARS FROM 1977 TO 1987

Year	% increase in average RPI	% of companies producing price level statements[a]	Price level accounting events of the year
1977	12.1	45	Hyde Guidelines
1978	8.4	56	
1979	17.2	58	ED 24 (April)
1980	15.1	78	SSAP 16 (March)
1981	12.1	95	
1982	5.4	81	Green Paper on Corporation Tax (March); Keymer–Haslam resolution (July); Stock Exchange stops requiring CCA interim accounts (December)
1983	5.3	61	Neville Reports (April and September); Carsberg Report (November)
1984	4.6	34	ED 35 (July)
1985	5.7	6	SSAP 16 no longer mandatory (June)
1986	3.7	3	Handbook (October)
1987	3.7	3	
1988	6.8	–	SSAP 16 withdrawn (April)

[a] Based on accounts circulated to shareholders during the year to 30 June of the following year. Hence, 1980 is the first year in which SSAP 16 was generally applicable (SSAP 16 applied to accounting periods commencing after March 1980). The first four years include methods other than the ED 24/SSAP 16 system. The methods were nearly all simplified CCA adjustments consistent with the 1977 Hyde Guidelines. The percentages of companies using these methods were 35, 51, 46 and 6 in 1977, 1978, 1979 and 1980, respectively.

Sources:

% increase in RPI for the year (year to December) — Datastream

% of companies producing price level statements — Skerratt and Tonkin (eds.), Annual Surveys of Financial Reporting, published by the Institute of Chartered Accountants in England and Wales, summarized by Hanson (1989), Tables 4 and 6.

(1979) has shown, it is possible to observe a clear relationship between the rate of inflation and the degree of interest, by professional bodies and others, in inflation accounting. The publication of SSAP 16 was followed by a sustained decline in the rate of inflation in the U.K., which was obviously a potent force in reducing the perceived need for a system of price change accounting, such as that of SSAP 16. Table 1 records annual compliance rates with SSAP 16 and annual rates of inflation.

The declining rate of inflation has to be viewed in the context of the broader economic and political environment which gave rise to it and which reinforced the reduction of interest in price change accounting. A Conservative government replaced a Labour government in 1979 and changed the emphasis of anti-inflationary policy from prices and incomes policy to restrictive monetary policy. This reduced the potential regulatory consequences of reporting high profits. In particular, the Price Commission was abolished, thus removing the need for large companies to pursue profit-reducing accounting policies, such as CCA[3]: it was no longer necessary to defend high profit margins to a public regulation body.[4]

Another important development arising from government policy was the Green Paper on Corporation Tax, published in March 1982. This considered the options for future changes in corporation tax and it was clear that it was unlikely that CCA adjustments to the published accounts were likely ever to be allowed for taxation purposes, because they were subjective and potentially vulnerable to manipulation by the taxpayers. Previously, the CCA debate had been for many years influenced by the prospect that the adoption of CCA might provide a basis for making stock appreciation relief a permanent feature of the tax system.[5] This had obviously provided a tangible incentive to adopt CCA and the removal of the incentive must have hastened the decline in the support for SSAP 16.[6] The need for CCA to be recognized for tax purposes was expressed by a number of respondents to monitoring and research studies in the 1980s.

Against this economic background it is not surprising that support for a fragile compromise such as SSAP 16 melted away so rapidly in the early 1980s. Our next task is to trace how the ASC responded to this situation.

THE MONITORING PERIOD: MARCH 1980–APRIL 1983

SSAP 16 was issued in March 1980 and the IAS was appointed to perform its role of monitoring implementation and proposing any necessary changes. It had twelve members (plus an observer from the Inland Revenue), of whom six were from the corporate sector (all employed by listed companies) and five from public practice. It formed five working parties, whose membership was drawn mainly from outside the IAS. Three of these, on value-based companies, ten-year summaries and interim statements, were concerned with perceived gaps in SSAP 16. The other two were concerned with monitoring and research. The monitoring group published two important reports in 1983 which were particularly influential.

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[3] The SSAP 16 gearing adjustment abated these for geared companies but could not change their sign. The monetary working capital adjustment could, in theory, increase profit in those cases in which monetary working capital was negative, but its effect was typically profit-decreasing and small.

[4] Lemke and Page (1992) provide statistical evidence which supports the view that regulatory considerations influenced individual companies' compliance with SSAP 16.

[5] The suggestion was first made by the Chancellor of the Exchequer (then Mr Healey) when Stock Relief was introduced, as a temporary measure, in 1974. It was repeated by subsequent Chancellors of the Exchequer, of both political parties.

[6] The Green Paper's conclusions were reinforced by the 1982 Budget, which put Capital Gains Tax Relief on a general index basis. This confirmed the government's preference for general indices rather than CCA for tax purposes.

During the monitoring period, there were signs of declining support for SSAP 16, associated with the declining inflation rate and other environmental factors discussed above. After an apparently satisfactory start, with high compliance rates, 1982 proved to be a critical year. Against the background of rapidly declining inflation rates and the publication of the Green Paper on Corporation Tax in March, there were signs of declining compliance with SSAP 16, particularly amongst large unlisted companies, and in July Messrs Keymer and Haslam proposed a special resolution of ICAEW members 'that members of the ICAEW deplore the introduction of SSAP 16 and call for its immediate withdrawal'.

Keymer and Haslam, two practitioners from a small firm, had successfully proposed a similar resolution in 1977, which had led to the withdrawal of ED 18. On that occasion they had been successful (54.1 per cent for the resolution) but in 1982 they were narrowly defeated (48.5 per cent for the resolution). However, the narrowness of the result appears to have shaken the confidence of the council of the ICAEW (by far the largest of the CCAB member bodies), and the possibility of another Keymer–Haslam resolution is likely to have affected the ICAEW's subsequent policy on CCA. Digressing, the origins of the 'grass roots' rebellion which Keymer and Haslam led probably owed as much to discontent with the management of the ICAEW as with CCA and are worthy of study in their own right. As two members of the ICAEW Council, Messrs Tricker and Wilkes, stated in the debate: 'They [Keymer and Haslam] know this resolution is not about the merit of SSAP 16 but the process by which demands are made and the profession is governed'. Nevertheless, SSAP 16 was the principal victim of the resolution, and the ICAEW became the accountancy body that was most consistently opposed to any subsequent standard or SORP on price change accounting.

Subsequently, in December 1982, the Stock Exchange further weakened the prospects for SSAP 16 by stating that the provision of current cost accounting information in interim reports would no longer be mandatory under the listing agreement, although SSAP 16 would still apply to annual accounts. This reduced the authority of SSAP 16 by suggesting that it was secondary to historical cost from the point of view of investors on the stock market.

The Neville Reports and the Carsberg Report

Against this inauspicious background, in 1983 the monitoring working party published two reports: an interim report in April and a final report in September. They will be referred to as the Neville Reports, the chairman of the working party being Mr Tom Neville, the finance director of Vickers. The same year also saw the completion of research on the benefits and costs of current cost accounting, coordinated by the Research Board of the ICAEW which included, in its report, an overall assessment by the ICAEW's director of research, Bryan Carsberg (Carsberg and Page, 1984), which became available in draft form in September 1983.

The interim report of the monitoring working party, the first Neville Report, was for the reasons below probably the most influential of these. Its conclusions were similar to those of the final report and its timing was opportune: precisely at the end of the three-year trial of SSAP 16 and in the immediate aftermath of the

Keymer–Haslam resolution. The evidence suggested considerable dissatisfaction with SSAP 16, and it confirmed the current climate of opinion amongst practising accountants and preparers of accounts that a replacement of the standard was required, although there was little consensus on the nature of the replacement.

These findings had a considerable influence on the ASC's subsequent efforts to replace SSAP 16. They were founded on questionnaires and reports of meetings, directed at the subjective opinions of preparers rather than an objective assessment of their behaviour. The samples of respondents were small (169 organizations, in all, were consulted) and were probably biased towards critics of SSAP 16, because a special effort was made to approach non-compliers. Strong critics were, in any case, more likely to respond to questionnaires than those who were content with the *status quo.* Nevertheless, there can be little doubt that the Neville Reports identified significant areas of dissatisfaction with SSAP 16, and these findings were largely confirmed by the independent questionnaire survey (which inevitably was also subject to possible response bias and the other potential difficulties associated with questionnaire surveys) carried out by Archer and Steele (1984) and published as the final volume of the Carsberg and Page study.

The Neville Committee made five recommendations for a possible successor to SSAP 16:

(1) The standard should require accounts to show the effects of changing prices, when these effects are material.
(2) The standard, in common with other SSAPs, should apply to all entities whose accounts are intended to give a true and fair view.
(3) The standard should permit different methods of calculating the effects of changing prices.
(4) The standard should not require an adjusted balance sheet.
(5) Where historical trend information is given, the standard should require it to be adjusted by the Retail Price Index.

Of these recommendations, (1) and (4) reflected the Report's evidence, (2) potentially conflicted with the evidence that small businesses were 'almost universally opposed' to SSAP 16, (3) reflected the lack of consensus in the evidence, and (5) bore no particular relation to the evidence. Thus, recommendations (2) and (5) were really expressions of the working party's beliefs, rather than outcomes of the monitoring process, and the universality principle (recommendation (2)) was contentious.

The Carsberg Report, which was circulated in November 1983, was more optimistic than the Neville Reports, but it was published later and its conclusions proved to be controversial. It was the result of research (fifteen separate studies in all) by a number of academics, and was completed between January and September 1983. It had a much broader research base than the Neville Reports and was ultimately published in four volumes in 1984 (Carsberg and Page, 1984). The first volume contained Bryan Carsberg's overview and the conclusions (pp. 83–4) which he derived from the program.

These were generally favourable to the benefits of CCA information and its cost effectiveness, provided that concessions were given in cases of special difficulty. CCA information should be provided mainly by way of note to the HCA accounts, and a CCA balance sheet should not be required. On the other hand, to maintain comparability between companies, a choice of method should not be permitted. On cost-benefit grounds, CCA disclosures should be required only for publicly listed companies and other large organizations.

The main difference between the empirical conclusions of the Carsberg and Neville Reports was in their assessment of the usefulness of CCA: Carsberg's conclusions were more optimistic than Neville's, although the difference was one of interpretation rather than fact. The inferences drawn for a new standard were, however, significantly different. Of Neville's five recommendations, Carsberg disagreed with numbers 2 (universal application to all entities) and 3 (permit choice of methods).

The Carsberg Report raised some controversy even in academic circles — Messrs Archer and Steele felt that their paper had been misrepresented in the summary report as being relatively favourable to current cost accounting. It was noted that Bryan Carsberg had been one of the architects of the U.S. current cost standard, FAS 33, and that Sir Douglas Morpeth, the chairman of the Research Board and author of the Preface (which also expressed enthusiasm for CCA) was the former chairman of the IASG, which had developed SSAP 16. However, after some heated exchanges in the accountancy press, it was accepted that the matter was one of honest disagreement.[7] The evidence clearly pointed to *some* use of SSAP 16 and whether this was regarded as sufficient to justify continuation of the CCA experiment was a matter of judgment. Archer and Steele (like the Neville Committee) were more impressed by the relative weight of the critics and non-users, whereas Carsberg was more impressed by the facts that some serious use had emerged in a relatively short experimental period and that the costs of CCA were low.

The comment of the chairman of the IAS (Stanley Thomson, of Ford U.K.) on the Carsberg Report was that it did not tell a great deal that was not already known, that is, there was no consensus as to where the IAS should go (quoted in *The Financial Times*, 15 November 1983). Unfortunately, this somewhat negative reaction was, from a practical standpoint, an accurate assessment of the situation and one upon which most parties would have agreed. The lack of consensus on the future of SSAP 16 was confirmed by two other surveys by professional institutes, the ACCA and the ICAI. Negative messages of a different kind were received from two ICAS projects, the results of which suggested that LIFO stock valuation was not an adequate alternative to the CCA cost of sales adjustment and that other simplified methods of preparing CCA figures could produce materially inaccurate figures for particular companies.

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[7] A review of the Carsberg Report and assessment of some of the arguments is provided in Whittington (1985).

ED 35: DEVELOPMENT, RESPONSES AND AFTERMATH

Development

Against this background of confusion, controversy and increasing hostility, the IAS was required to suggest changes to SSAP 16. It chose to produce an exposure draft of a new standard, which was eventually published as ED 35 in July 1984.

The preparation of ED 35 was conducted against a background of decreasing compliance with SSAP 16. The ASC received statistics from the Stock Exchange Quotations Department which showed that the proportion of companies not filing CCA accounts increased from 21.5 per cent in the second quarter of 1983 to 28.0 per cent in the third quarter and 47.8 per cent in the final quarter. The IAS was likely to be sensitive to increasing criticism of SSAP 16 from the corporate sector, because six of its twelve members were employed in the corporate sector.[8] At the same time, in the U.S., the CCA standard FAS 33 (which also required CPP disclosures), which had been issued in 1979 for a five-year experimental period, was in the process of being reassessed, so that the international background was also becoming less supportive of CCA.

Early in the preparation of the new exposure draft there was discussion of the choice between a universally applicable standard which would have to allow a variety of methods (the Neville approach) and a standard with narrower applicability (e.g., only to large companies or listed companies) and prescribing a more closely defined set of methods (the Carsberg approach). An early draft supported the universality approach. Two of the three auditors from large audit firms who were members of the IAS, together with an industrial member, pressed strongly for the approach of restricted application combined with precise rules, and evidence from the Auditing Practices Committee also supported this view. The APC drew attention to the difficulties which auditors would face if accounting methods were not clearly prescribed yet (as was proposed) the 'true and fair view' override required that the effects of changing prices be disclosed, non-disclosure leading to qualification of the audit report.

A revised version of the IAS's draft was discussed by the full ASC in February 1984: this version was more specific about the nature of the current cost disclosures and omitted references to the true and fair view. However, the ASC, which had a greater representation of auditors and users of accounts than the IAS, was unhappy with the universality approach. It decided to reinstate size criteria for the CCA requirements and to exempt value-based companies.

The ASC was in favour of a strong standard, required as part of the true and fair view, clearly prescribing methods, including information on the current cost of assets. In the following month (March 1984) the ASC sought a supplementary counsel's opinion, from L. Hoffman and M. Arden, as to whether cost-effectiveness criteria could be applied in selecting the information necessary to give a true and fair view. Counsel's opinion was supportive of this view, thus opening the way for exemptions from the standard for certain categories of company, on cost-benefit grounds.

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[8] ED 35 was drafted, under the supervision of the IAS, by a working party of two auditors and two accountants from industry.

Following receipt of the Hoffman–Arden Opinion, the ASC issued a Statement of Intent on accounting for the effects of changing prices. This delineated the main features of a future standard. CCA disclosure requirements were to be restricted to public companies, rather than on grounds of size, and value-based companies would be exempt. Compliance with the standard would be essential to a true and fair view. Current cost adjustments for depreciation, cost of sales, monetary working capital and gearing would be required, but alternative methods of measuring gearing would be allowed. Simplified methods of arriving at current cost amounts of certain assets would be permitted.

The APC responded that the restriction of application of the proposed standard to public companies would cause no difficulty to auditors, that the current cost accounting information required would be capable of being audited, and that omission of the information from the accounts would lead to a qualified audit report. Thus, the way was clear for the new draft standard to be issued as ED 35, *Accounting for the Effects of Changing Prices*, in July 1984, with an exposure period ending in December 1984.

The features of ED 35 which differentiated it from SSAP 16 reflected the Statement of Intent and the debate which preceded it. These differences are summarized in Table 2.

TABLE 2

COMPARISON OF ED 35 WITH SSAP 16

Feature	SSAP 16	ED 35
1 Presentation of current cost	Supplementary statement	Notes to main accounts
2 Necessity of current cost for 'true and fair' audit opinion	No	Yes
3 Application to 'value based' companies	No	No
4 Number of permitted gearing adjustments methods	One	Three[a]
5 Simplified methods of measuring current cost permitted	No	Yes[b]

[a] Permitted methods were Godley/Cripps and general indexation, in addition to the SSAP 16 method.
[b] Methods described in TR 565 included indexed historical cost, with less emphasis on recoverable amount.

In terms of the earlier debate, the universalists (as represented by the Neville Committee and the IAS) appeared to have been defeated by those who believed in a more precise standard with narrower application (as represented by the Carsberg Report, the APC and the ASC), although SSAP 16's disclosure requirements had been softened somewhat (e.g., in the choice of gearing adjustment and valuation method). However, it was a Pyrrhic victory, and ED 35 never became a standard.

Responses

During the exposure period, in September 1984, the ASC held meetings with finance directors from the Hundred Group and the Midland Group. These suggested disenchantment with the whole principle of current cost accounting. Consultation with the CLCB Lending Bankers Committee was more encouraging, insofar as a current cost balance sheet was felt to be helpful. However, the Committee refused publicly to support current cost accounting and expressed a preference for universal application, which ED 35 had rejected.

When all comments were received, they were so discouraging that it was clear that if ED 35 were to become a standard it would face a hostile reception. Table 3 summarizes these comments.

TABLE 3

RESPONSES TO ED 35

	Support	Qualified support	Qualified opposition	Opposition	Total
Companies	2	6	8	25	41
Audit firms	-	3	7	7	17
CCAB bodies[a]	-	-	1	3	4
Other bodies	5	2	3	9	19
Individuals[b]	1	11	20	6	38
Total	8	22	39	50	119

[a] The CCAB bodies were: ACCA and ACCA—public sector; ICAEW—its overall comments were composed of comments from twenty district technical advisory committees; ICAS—both its ASC and APC; ICMA.

[b] One individual—M. J. Cope—made two submissions, as an individual and as ACCA—public sector.

There were 120 submissions on ED 35 which we have classified into four categories:

1. Outright opposition — included in this category were comments that ED 35 should be withdrawn, that CCA was costly and not useful and that CCA information was not necessary for accounts to give a 'true and fair' view.
2. Qualified opposition — included in this category were comments that ED 35 should not be made into a mandatory standard and that it should be a SORP. Some respondents considered that there were technical shortcomings, and that accounting treatments were too flexible and subjective, and that it should apply 'universally'.
3. Qualified support — included in this category were comments that the CCA requirement needed legal backing, that CCA accounts should be the basis for taxation and that CCA information should not be disclosed merely as notes to the accounts.
4. Support.

It must be emphasized that in classifying the submissions into the four categories, subjective judgment has been used. In many cases, the major reason why the respondents rejected ED 35 was not made clear.

Clearly, the opposition to ED 35 was overwhelming: three-quarters of the respondents were opposed. Outright opposition was strongest amongst companies, as might have been expected from the earlier consultations and the evidence of the Neville Reports and the Archer and Steele study. However, a crucial feature of the responses is that all of the five CCAB member bodies were opposed to ED 35, three of them strongly: a standard could be issued only if all CCAB members supported it. Equally striking is the lack of support from audit firms: none gave unqualified support and only three (Clark Whitehill, Dearden Farrow and Thomson McLintock) out of seventeen gave qualified support. An analysis of the eight responses (out of 120) which offered unqualified support was not encouraging. The two companies offering unqualified support were the British Railways Board and the British Airports Authority, both in the public sector and subject to unusual regulatory and financing constraints. Of the five 'other bodies' offering unqualified support, three represented groups in industries whose accounts were governed by special legislation (the British Insurance Association, the Building Societies Association and the Water Authorities Association), although the first two might claim a legitimate interest as investors and lenders who used data in accounts in forming their decision. The only really encouraging comment was the unqualified support of the Society of Investment Analysts, representing important users of accounts of listed companies.

Aftermath

In view of these substantially unsupportive responses, it was not surprising that ED 35 was not issued as a standard, even with revision. The outright opposition of three CCAB member bodies was sufficient to prevent this. The chairman of the CCAB, Peter Godfrey, suggested to the CCAB office-holders that another, radically different, draft standard should be exposed. Meanwhile, the ICMA had written to the DTI Minister regarding the possibility of statutory backing for a standard on price change accounting,[9] and had received a negative reply.

In March 1985, the ASC held meetings with five CCAB member bodies, whose views varied between advocating a standard (ICMA), a SORP (ACCA and ICAI), or a revised exposure draft (ICAEW and ICAS).

There was no agreement on the nature, applicability or content of future guidance on accounting for changing prices, although there was a residual consensus that something should be done, and some form of current cost accounting was the favoured starting point.

Consultations then took place with the Stock Exchange, which suggested a general standard requiring companies to report the effects of changing prices, together with more detailed guidance in a SORP (similar to the ACCA's proposal). The Stock Exchange would be unable to enforce a standard if a significant proportion of companies (30 per cent or more) failed to comply, and the backing of companies and auditors was essential. Finally, the DTI was approached once more but it did not show enthusiasm for legal backing. It spelled out the alternatives and enumerated their difficulties, including the fact that legal backing would reduce the influence of the CCAB and the accounting profession on the standard-setting process.

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[9] The ICMA published its own proposals (1984), which were for current cost disclosures using a general index capital maintenance concept, that is, eliminating the gearing and monetary working capital adjustments, and emphasizing a flexible approach with application across a wide range of companies.

Following the consultations, in March 1985 the ASC withdrew ED 35, and in June 1985 the mandatory status of SSAP 16 was suspended, so that it effectively was reduced to the status of a SORP.

PRELIMINARY ED 38

The ASC now set about what was to be its final attempt to produce an acceptable standard on accounting for changing prices. This was termed a 'preliminary' exposure draft, tentatively entitled ED 38, *Reporting the Effects on Changing Prices on Earnings*. It was given preliminary exposure, by private circulation, to various companies, auditors and representative bodies, but the response was so lacking in enthusiasm that 'ED 38' was never formally issued as an exposure draft.

ED 38 bore all marks of a final desperate attempt to court popularity in all quarters.[10] It therefore had an even narrower range of application than ED 35, being confined to companies listed on the Stock Exchange or the Unlisted Securities Market (USM). This narrowed the range of possible objectors and raised the possibility of some support (albeit probably weak) from the Stock Exchange. It did not require disclosure of current cost balance sheet information and merely insisted on a one-line adjustment to the profit and loss account, which would indicate the amount which must be set aside to maintain real capital. This adjustment could be made using either operating capability as the capital maintenance concept (as in SSAP 16) or financial capital maintenance (i.e., general index adjustment of opening capital). The choice of the latter would avoid the use of the contentious monetary working capital and gearing adjustments and would also appeal to value-based companies which had always opposed the use of operating capability.

These concessions made ED 38 a much more flexible and less contentious proposal than ED 35, and it attracted less opposition, although some commentators thought that it was too flexible to be useful. The results of the consultation are contained in Table 4. Commentators were divided equally between support and opposition, with unqualified opposition being more common than unqualified support. Opposition was strongest amongst non-specialized companies (nine cases of unqualified opposition out of twenty-four respondents) and the three representative bodies (the Midland Group of finance directors, the ICAI, and the Association of Investment Trust Companies). Only four of the forty-eight respondents indicated that they were willing to attach their names to a public statement of support for ED 38.

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[10] A summary of ED 35's proposals was reported in *Accountancy*, October 1995, p. 3.

TABLE 4

RESPONSES TO ED 38

	Support	Qualified support	Qualified opposition	Opposition	Total
Audit firms	4	4	3	4	15
General companies	4	7	4	9	24
Value-based companies	3	1	–	–	4
Trading and shipping	–	1	1	–	2
Other bodies or individuals	–	–	–	3	3
Total	11	13	8	16	48

Subsequent to these discouraging responses, the ASC set about further consultations with the accountancy bodies and government departments, in September and October 1985, in order to explore the possibility of legislative backing for accounting standards. The responses of the accountancy bodies again revealed lack of unanimity, but none advocated a standard without legal backing. Two (the ACCA and the ICMA) supported such backing, but one (CIPFA) opposed it. The ICAEW felt that CCA should not be pursued further, and the ICAI favoured a SORP. Of the other bodies, the Stock Exchange favoured a SORP but was not prepared to enforce it. The Bank of England, the Treasury and the Department of Industry all indicated that legislative support would be unlikely.

As a result of these consultations, the ASC issued a Policy Statement in December 1985. It recommended withdrawal of SSAP 16, and noted that the ASC would proceed no further with ED 38 or any other proposal for a standard or SORP on accounting for the effects of changing prices. A handbook on accounting for changing prices would be issued, to preserve the method developed in previous ASC pronouncements, and the CCAB would be consulted about any further action on the subject.

THE FINAL PHASE

Following the Policy Statement, the ASC duly held a meeting with the presidents of the CCAB member bodies. The ASC confirmed its decision not to issue any standard on the subject, because of its inability to force compliance. The views on the CCAB proposals confirmed the divided opinions expressed earlier. The largest institute, the ICAEW, was alone in supporting the ASC's 'no further action' policy. The Irish and Scottish institutes felt that there should be some future action, although the time was not ripe for a new standard on the subject. The remaining three institutes were united in supporting a one-line standard or SORP. The president of the ACCA felt particularly strongly on this issue.

In April 1986, the ASC sought CCAB approval for the withdrawal of SSAP 16 and a statement of support in the Preface of the new Handbook. Five of the CCAB member bodies agreed with various degrees of reluctance, but the ACCA dissented, maintaining its support for a one-line standard. The factors which swayed the majority were expressed by Derek Boothman, of the ICAEW:

> I agree that it is important that companies disclose the information but we have to be realistic. Our work on the Corporate Report in the mid-seventies showed that the user is king, and it seems to me that the users are just not interested in this information and that there is not a strong enough push from the government to get the information disclosed. We must remember that we sit here because our members have elected us, and I have no doubts whatsoever that they want the standard withdrawn ...
>
> I think the English Institute's vote was interesting. The vote was 68 in favour of withdrawing the standard and only 3 against.

Subsequently, in August 1986, the ACCA issued a public statement calling on the other CCAB bodies to join it in instructing the ASC to develop an alternative standard for dealing with the effects of changing prices. This did not evoke a positive response from the other CCAB bodies and in October 1986 they issued a joint statement welcoming the publication of the ASC Handbook on *Accounting for the Effects of Changing Prices.* They encouraged companies to appraise and, where material, report the effects of changing prices. They also supported the ASC's proposal that SSAP 16 be withdrawn, but this could not be done without the consent of the CACA,[11] which was not forthcoming until 1988. SSAP 16 was finally withdrawn in April 1988.

THE AUTHORITY AND INDEPENDENCE OF THE ASC

We now turn to our interpretation of the implications of the demise of SSAP 16 for the authority and independence of the ASC. For the reasons given earlier, the withdrawal of price change accounting was probably an inevitable consequence of changes in the economic environment, notably the decline in the rate of inflation, and the U.K. experience was repeated in other countries, particularly in the English-speaking world, where declining rates of inflation were associated with the suspension or withdrawal of current cost accounting recommendations or standards.[12] It would thus be inappropriate to suggest that the ASC was to blame for the setbacks which it suffered in this area of activity. However, the study of the ASC's responses to these external pressures does provide an opportunity to observe how the ASC functioned and its limitations. We concentrate on two central issues: the authority of the ASC to enforce its standards, and the ASC's independence of particular interest groups.

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[11] The Association of Certified and Corporate Accountants (ACCA) had changed its title to the Chartered Association of Certified Accountants (CACA).

[12] This is consistent with the Mumford (1979) analysis of the price change accounting debate. The international experience is discussed in Tweedie and Whitington (1984).

Authority

Clearly, the withdrawal of SSAP 16 without replacement was a defeat for the ASC's authority. In all its pronouncements throughout the period studied, the ASC remained committed to the principle of reporting the effects of changing prices, and to doing so by using CCA rather than CPP valuation principles. Although there were legitimate differences of opinion amongst ASC members and between the ASC and its subcommittee (IAS) about such issues as universality, flexibility and the appropriate capital maintenance concept, the ASC appears to have resolved its own internal debates sufficiently well to produce coherent recommendations. Its problem was to persuade preparers of accounts to accept its recommendations and the increasing degree of non-compliance with SSAP 16 was the central problem. Actual non-compliance with SSAP 16 increased the likelihood of the threat of non-compliance with possible replacements, and this would explain the ASC's rapid abandonment of both ED 35 and ED 38 following adverse responses to consultations.

The ASC responded initially to the non-compliance problem by proposing to bring current cost disclosures within the scope of the main accounts as part of the Notes. This would deal with the apparent confusion caused by having a second (supplementary) set of accounts, which the Monitoring Working Party identified, but it would also penalize non-compliance by a full qualification of the audit report. In order to establish its authority to do this, the ASC sought the first Hoffman–Arden opinion (September 1983),[13] which confirmed that the ASC's standards were one factor which the court would take account of in establishing whether the accounts give a true and fair view of the performance and state of affairs. However, the same opinion drew attention to the fact that such accounts should follow *generally accepted* accounting principles and that, in the case of extensive non-compliance with an accounting standard, it would be difficult to demonstrate that the standard's principles were generally accepted.

Thus, once SSAP 16 had lost support, it would have been difficult to assert that current cost disclosures were 'generally accepted'. In fact, for its first two years, SSAP 16 was followed by the vast majority of large companies, particularly listed companies. If the SSAP 16 disclosures had been part of the accounts (rather than supplementary disclosures) it might have been possible to assert that they had become generally accepted. However, once non-compliance started, the ASC would have had no means of review or enforcement: in order for the issue of accounting practice to come before the court, an aggrieved shareholder or other party would have to bring an action claiming loss due to the non-disclosure. This lack of review and enforcement powers was an issue subsequently addressed by the Dearing Report (1988) and dealt with in the new standard-setting regime (1990) by the review panel, with powers to bring legal action under the 1989 *Companies Act*.

The legal powers of the ASC in determining the information necessary to establish a true and fair view were therefore weak and indirect. A more direct power was the

[13] The second Hoffman–Arden opinion dealt with the narrower issue of whether a cost-benefit test could be applied to the information necessary to establish a true and fair view.

professional discipline of the CCAB bodies which supported the ASC, but this too was limited, for three reasons:

1. Accounts are produced by the *directors* of companies. Membership of a CCAB body is not a necessary qualification to be a director.
2. The audit report is produced by a professional accountant, but the penalty for departure from accounting standards would at worst be only a qualified audit report, which would bring no direct disadvantage to the company when non-compliance with a particular standard was the norm, so that the qualification could be regarded as technical. Moreover, directors could, in some cases, plead that departure from the standard was justified by the circumstances of the company, for example, in the case of value-based companies. In the case of SSAP 16, failure to comply with the standard did not lead to a full qualification in the audit report if the main accounts were on the historical cost basis: in such cases, non-compliance was simply noted, without qualifying the audit opinion.
3. The price of obtaining the support of CCAB member bodies was that each ASC standard was subject to the approval of each body. Each body was in turn democratic and had to satisfy its 'grass roots' opinion, as the ICAEW Council was painfully aware, following the Keymer–Haslam resolution in 1982. Thus the ASC's authority was severely limited by having to satisfy six different professional bodies. Even the withdrawal of a standard required this approval, which was why SSAP 16 was not withdrawn until 1988, despite the ASC's recommendation in 1986.

Another private-sector source of possible support for the ASC was the Stock Exchange, which specified accounting requirements in its Listing Agreement. The Stock Exchange contributed to the declining compliance with SSAP 16 by its withdrawal of the requirement for interm current cost information. Subsequently, we have seen that the ASC approached the Stock Exchange twice, in search of support for a replacement for SSAP 16, and on both occasions the Stock Exchange refused to offer serious support. It regarded compliance with accounting requirements as a matter of auditors and the accounting profession, and would be unwilling to de-list companies merely for non-compliance with accounting standards. A Stock Exchange spokesman expressed anxieties about international competition between stock exchanges, and it is clear that the London exchange did not wish to be put at a competitive disadvantage by having to impose heavier accounting requirements on its listed companies than those applied by competitive exchanges in other countries. It should also be noted that the Stock Exchange was, at the time, undergoing considerable regulatory change and internal reorganization in preparation for the 'Big Bang' reform of the market structure in October 1986.

The final, and potentially the most powerful, source of authority for the ASC was the government, and this source also failed during the period studied (1980–88). The government had two sources of power: offering incentives to comply and legal compulsion. It had, in the past, offered incentives through promises by successive Chancellors of the Exchequer (starting when Stock Relief was introduced in 1974) that current cost accounting might form the basis of tax reliefs. This prospect was subsequently removed by the 1982 Green Paper on taxation. The other incentive, the prospect of regulatory advantage to reporting current cost profits (which tend to be lower than historical cost profits) was also substantially removed by the abolition of the Price Commission and the adoption of a policy of non-intervention in business affairs. It is notable that the applications of current cost accounting which have survived the demise of SSAP 16 have been mainly in the public sector (such as London Underground) or in the recently privatized and regulated sector (such as the water companies and British Gas plc), in which CCA still offers potential advantages in dealing with regulators.

With regard to compulsion, there was no enthusiasm in government circles for providing legislative backing for current cost accounting, despite the fact that current cost accounting was originally put on the ASC agenda by the report of a government committee, the Sandilands Committee (1975). Although a Conservative government had appointed the Sandilands Committee in 1974[14] and another Conservative government was in power from 1979 onwards, the economic strategy was different in the latter period. The Sandilands Report has to be set in the context of prices and incomes policies, designed to deal with 'cost–push' inflation,[15] in which general index adjustments (such as in CPP accounting) are seen as leading to an inflationary spiral. Such fears had evaporated by the 1980s, when the government was attempting to deal with inflation by restrictive monetary policies and demand management. This implied no fear of indexation: indeed, the government introduced index-linked securities for the first time. Moreover, it implied a 'hands-off' approach to the regulation of prices, profits, dividends and wages, and hence a neutral attitude to alternative methods of business accounting. This change of emphasis in economic policy probably explains the lack of enthusiastic support for the ASC from the DTI and other government agencies during the price change accounting debate, from 1980 to 1986. Given this lack of enthusiastic support, the ASC was probably doomed to failure on the price change accounting issue, although, as we have seen, it sought support in every conceivable quarter. The withdrawal of SSAP 16 was, however, confirmation that the ASC lacked authority to deal with really contentious issues. By 1986 another contentious issue, creative accounting, had already appeared on the scene,[16] and by 1988 the CCAB had appointed the Dearing Committee to examine the whole standard-setting process. This examination led to the creation of a new system, with greater authority, in 1990.

Independence

A potential problem of self-regulation is that the regulatory body may serve only the narrow interests of the regulated group, rather than balancing the interests of producers, consumers and the wider public interest. In its early days, the ASC membership was dominated by auditors, and thus was potentially vulnerable to criticisms of this type. In 1978 the ASC published a consultative document, *Setting Accounting Standards,* and in 1981 its response to comments received was published (known as the Watts Report). As a result of this, in August 1982, the CCAB bodies reduced the size and broadened the membership of the ASC, to include five 'user' members (out of a total of twenty). As a result of this reform, the ASC membership was more balanced between preparers, users and auditors of financial statements. Nevertheless, it was still seriously constrained in its scope for action by the fact that its sponsors were the CCAB bodies which could individually veto standards.

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[14] The minister responsible, Peter Walker, was also a minister during the period reviewed here (1980–6).

[15] See Tweedie and Whittington (1984), pp. 74–80.

[16] *Off-Balance Sheet Finance and Window Dressing*, TR 603, was issued by the Technical Committee of the Institute of Chartered Accountants in England and Wales in December 1985.

The debate on price change accounting between 1980 and 1986 clearly shows these constraints at work. The CCAB bodies were consulted at each critical stage, and their lack of support for a common position on price change accounting made the ASC's task difficult, as it needed their unanimous support to issue a standard. The leaders of the professional bodies were in a difficult position. They seem to have had a more positive attitude than their members both to standard setting in general and to price change accounting in particular. The dilemma facing them was well expressed in the statement by Derek Boothman of the ICAEW, quoted earlier. The ICAEW was by far the largest of the CCAB member bodies and had more members in public audit practice than any other body. The auditors would be in the front line of implementing price change accounting on the 'true and fair view' basis proposed in ED 35. The ICAEW leadership had also suffered the trauma of the second Keymer–Haslam vote, which it won by the narrowest of margins after extensive lobbying. It was not, therefore, surprising that the ICAEW was the CCAB's member most firmly in favour of abandonment of price change accounting after the ED 35 comments had proven to be overwhelmingly negative.

Within the accounting profession there is, of course, an important distinction between accountants and auditors. The preparers of accounts, that is, companies and their accountants, were the most strongly opposed to price change accounting. The auditors were also opposed, but less strongly. The Auditing Practices Committee did not object to price change accounting provided that its form was clearly specified, although the auditing firms were substantially opposed to ED 35. The main division of opinion between preparers and auditors seems to have been on the form of price change accounting, if it was necessary to have it at all, and particularly on the issue of choice between a flexible and universally applicable standard and one which was restrictive in method and applicable to a narrower range of companies. The preparers (companies) tended to prefer the former, perhaps because it gave them greater choice of accounting method, whereas the auditors tended to prefer the latter, possibly because it made auditing easier, although neither group was enthusiastic about any form of price change accounting. It is notable that the Monitoring Working Party, which drew half of its members from companies, preferred the 'universal and flexible' approach, whereas the ASC, which had stronger auditing representation and less corporate representation, rejected this view in its ED 35 proposals.

The group which did not seem to have a great input into the ASC's work was the user group. The responses to exposure drafts by users were small in number. This probably indicates apathy amongst users, which must have made it difficult for the ASC to take their needs into account; despite their increased representation on the ASC, they were still a minority (five out of twenty) and the absence of a coherent constituency expressing its views must have made it difficult for the users on the ASC to speak with authority. It has already been noted that the Society of Investment Analysts was one of the few organizations to give unqualified support for ED 35 and the Committee of Lending Banks was one of the few bodies consulted in the ED 35 exposure period which felt that current cost balance sheets were useful. If these views were more widely held by users, it is unfortunate that they were not more widely expressed, because the ASC could not be expected to take account of views which it had not heard.

The broader public interest was represented by the government. There were representatives of government bodies as members or observers of the ASC and its subcommittees and working parties. Also, government bodies, such as the DTI, were consulted frequently by the ASC. They were often unenthusiastic in their responses because the policy of the government at this time was essentially one of non-intervention.

Thus, all sectors of the ASC's constituency were able to express their views to it, the least enthusiastic in this period being the users and the government. The ASC also conducted research through its Monitoring Working Party (the Neville Reports) and had access to the results of academic research through the ICAEW's research program (Carsberg and Page, 1984). Nearly all of the amendments to SSAP 16 proposed in ED 35 and the abortive ED 38 were proposed somewhere in one or other of the research reports. Thus, the ASC clearly took account of the research results. Whether it did so in a balanced and systematic way, rather than clutching at those recommendations which suited its predilections, is open to debate: the pronouncements of the ASC were not usually justified by reasoning detailed enough to make such an assessment. Equally, the interpretation of the results of research was the subject of some disagreement, as was seen in the case of the Carsberg Report. Nevertheless, given the natural limitations of time and resources, there is no reason to doubt that a serious effort was made to utilize the available research results effectively.

In summary, the ASC was clearly constrained by its constitution, and in particular by its obligations to the CCAB bodies. Within these constraints it sought information from preparers, auditors, users and government. The fact that the outcome of the price change debate was most consistent with the wishes of preparers and their auditors (i.e., abandonment of CCA)[17] reflects the balance of the evidence presented to the ASC, given the constraints on its powers (i.e., its need to obtain voluntary compliance), rather than any lack of independence in its process of *judgment.*

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[17] A telling indication of the way in which auditors supported companies is a statement by the then president of the ICAEW (B. Jenkins, a partner in a Big 8 audit firm), during the Autumn 1985 consultations. He stated that a high priority was to reduce the burdens on business. Accountants had more important services to offer clients. In the context of the total contribution accountants could make, CCA was far from being the highest priority. Rather, the profession should sharpen up management information for clients.

Indeed, the fact that it persisted with ED 35 and ED 38 when price change accounting was clearly unpopular is evidence of the ASC's independence and desire to lead rather than follow popular opinion. Nevertheless, the constraints did represent a serious impairment of the ASC's independence of action. Many of these constraints were relaxed in the new standard-setting regime, which replaced the ASC in 1990. In particular, the professional bodies ceased to be the sole sponsors of the standard-setting body and lost their right to approve or veto accounting standards. Thus, the events surrounding the withdrawal of SSAP 16 demonstrated some of the weaknesses in its constitution which subsequently led to the replacement of the ASC.

CONCLUDING COMMENTS

Our interpretation of the historical record of the ASC's struggle to find a successor to SSAP 16 has concentrated on the problems of the ASC, which led to its replacement. However, a number of the forces at work are of interest in their own right as features of the environment of financial reporting which are likely to continue to bear on the ASB or any other successor to the ASC. These include:

1. *The tension between companies and their auditors.* We have seen that company representatives, in their submissions to the ASC and through membership of the IAS and other bodies, tended to prefer flexible modes of reporting, but adopting the universality principle in application. This would give companies the freedom to choose methods which suited them. Auditors, on the other hand, preferred closely prescribed methods with application only to the largest companies: this would minimize the element of auditor judgment and avoid conflicts with cost-sensitive small clients.

2. *The importance of the economic environment.* Although much of the evidence on changes in the economic environment has been connected only circumstantially with the collapse of support for CCA, we find it persuasive. In some respects, notably taxation, the evidence is stronger: many managers commented that CCA would be attractive if it were recognized for tax purposes.[18] The dramatic collapse of support for CCA demonstrates that, however compelling the theoretical case for a particular accounting practice or reform, it will not be followed, in the absence of legal compulsion, if preparers of accounts do not regard it as being in their economic interests. Since even the ASB has only limited legal backing, and most standard-setting bodies rely on persuasion rather than compulsion, the experience of the withdrawal of SSAP 16 (and FAS 33, which was the FASB's equivalent in the U.S.A.) stands as a warning to all standard setters who attempt to lead, rather than follow, their constituencies. Standard setting is a political process and requires skilled political judgment.

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[18] The importance of Taxation as a motivation for adopting CCA has been a recurrent theme in the history of price change accounting. See, for example, Clarke (1982) and Tweedie and Whittington (1984).

3. *The role of the accountancy bodies.* The U.K. accountancy profession, as represented by the six members of the CCAB, was not supportive of the ASC. The six bodies failed to achieve a consensus, possibly because of their own internal political problems (such as the Keymer–Haslam resolution at the ICAEW) and also perhaps because of the rather different perspectives of their respective memberships (e.g., two bodies, CIMA and CIPFA, did not have private-sector audit responsibilities). This situation still exists, although the ASC's successor body, the ASB, is not directly responsible to the CCAB or the accountancy bodies.

4. *The role of government.* SSAP 16 was the product of a tortuous debate initiated by the government, through the Sandilands Committee, and encouraged subsequently by governments of both political parties, yet the government was unwilling to legislate to support the ASC's efforts, despite pleas from the professional bodies. This suggests that governments are unreliable allies for standard setters. It does not bode well for any possible enlarged future role for government in standard setting.

5. *The absent user.* Our analysis of the inputs to the work of the ASC and the IAS shows a general absence of significant participation by users of accounts, particularly in responding to exposure drafts. This is a serious difficulty in view of the fact that the benefits of accounting standards are supposed to accrue to users. There is clearly a possibility that accounting standards have the properties of a public good (all users can benefit, even if they do not 'pay' by contributing to the standard-setting process), and that there is a corresponding temptation for users to 'free ride' on the efforts of others. This is consistent with the fact that the most significant user response was that from the Society of Investment Analysts, which represents a group interest rather than an individual interest. Another possible guardian of the user interest was the Stock Exchange, but we have seen that this proved to be a timid ally to the ASC. This general absence of an articulate user lobby is perhaps the most serious difficulty facing standard setters and raises fundamental issues such as whether standards are really needed and, if so, whose needs they meet, and how appropriate standards are to be identified.

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ABACUS, Vol. 32, No. 1, 1996

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Asymmetry in Stock Returns Following Block Trades on the Australian Stock Exchange: A Note

A number of recent U.S. studies have examined the price impact of large (block) trades using intraday data. A major finding is that the price movement following block trades continues upwards following purchases but reverses following sales. This asymmetry in price behaviour, which suggests that block sellers pay a liquidity premium while block buyers do not, has been described as 'intriguing' and a 'key puzzle'. The purpose of this note is to determine whether the phenomenon exists on the Australian Stock Exchange. Evidence consistent with the 'puzzling' asymmetry is shown to exist when returns are measured from the block trade until the close of trade. Contrary to U.S. findings, which have shown that prices appear to reverse following *both* block purchases and sales in transaction time analysis, the asymmetry in price behaviour is also demonstrated to exist in transaction returns for the ASX. All results are found to be robust to a number of research design innovations and data partitions.

Key words: Pricing; Securities trading.

A number of recent U.S. studies analysing the impact of block trades using intraday trade data have found evidence consistent with a price continuation following block purchases and a price reversal following block sales (e.g., Holthausen *et al.*, 1987, 1991; Choe, *et al.,* 1991; Chan and Lakonishok, 1993). This evidence suggests that block sellers pay a liquidity premium while block buyers do not. This asymmetry in reaction has been described as 'intriguing' (Holthausen *et al.*, 1990, p. 90; Chan and Lakonishok, 1993, p. 175) and a 'key puzzle' (Chan and Lakonishok, 1993, p. 175), prompting Chan and Lakonishok to argue that 'Further research is called for to account for the differences between the effects of buys and sells' (1993, p. 197). The aim of this paper is to determine whether this asymmetry in reaction exists for block trades executed on the ASX.

The data used for this study are unique because they provide full details of all orders submitted and trades executed on the Australian Stock Exchange through the Stock Exchange Automated Trading System (SEATS). The data were captured on-

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The authors are grateful for the comments and suggestions of Phillip Brown, Peter Swan and Terry Walter, and to Tim Cooper for programming assistance.

line and in real-time, ensuring near-perfect accuracy. This study is intended to provide the basis for further work probing asymmetry in trade returns using this powerful data set. The evidence presented confirms the existence of asymmetry in returns from the block trade until the close of trade. Contrary to U.S. findings, the intriguing price behaviour following block trades is also demonstrated to exist in transaction time analysis.

METHOD

Block trades were defined as the largest 1 per cent of on-market trades for each stock over the sample period.[1] Unlike the bulk of prior research which used a problematic 'tick rule' in order to categorize trades (see Lee and Ready, 1991; Aitken and Frino, 1993), trades in this study were partitioned into block purchases and block sales on the basis of the market order which preceded them on the database. Block purchases represented trades where a market bid executed against a standing limit ask(s), while block sales represented trades where an ask order executed against a standing limit bid(s). Unlike U.S. databases, the ASX data also permitted us to identify instances in which a market order was executed against a series of limit orders. These separate trades were treated as one for the purpose of identifying block trades. In order to ensure a 'clean' sample of block trades were analysed, a block trade was excluded from the analysis if it was within five trades of another block.

The trades sampled were drawn solely from on-market trades, which result from computer matching of bids and asks that are entered on to the SEATS system by participating brokers. By contrast, off-market trades are manually matched away from SEATS and later reported to the market (see Appendix). Off-market trades were not analysed in this study because of a number of data limitations. First, the market orders triggering off-market trades are not stored in the database, and hence do not allow us to unambiguously infer their direction. Second, the time stamp attached to off-market trades is the time at which the trades are reported, not the time at which they take place.

To analyse the intraday price behaviour surrounding the sample of block trades and re-examine the findings of earlier studies, two approaches were used. The first was a transaction time event study approach similar to Holthausen *et al.* (1990). Since the anomaly in price behaviour normally appears when returns are calculated from the open to the block trade and the block trade to the close, the second approach used this form of analysis, which is consistent with Chan and Lakonishok (1993).

The abnormal returns associated with each of the eleven trades surrounding and including the block trade (experimental trades), were estimated as the trade to trade return associated with the experimental trades less a benchmark return. The benchmark return for each experimental trade was the mean return for a group of control trades, selected from the set of all trades for a given stock which occurred in the same minute of each trading day as the experimental trade, over the year prior to the date of the trade. The control trades were selected in this manner in order to avoid any potential time of day biases, analogous to that used by Brown *et al.* (1992).[2] The abnormal return for each experimental trade was then aligned in transaction time, and averaged across each transaction interval. A t-test on the null of whether the mean abnormal return was equal to zero was carried out for each transaction interval. A similar approach was applied to estimate the abnormal returns associated with block trades from the opening of trading to the block, and from the block to the close of trading.

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[1] The sampling procedure is very similar to Holthausen *et al.* (1990). However, they selected the largest fifty trades by number of shares traded for each stock by tick type. The sample selection procedure used in this study disregarded the trade direction in order to avoid potential differences in the size of buyer and seller initiated trades which may itself induce asymmetry in price effects (see Choe, *et al.*, 1991). The effects of possible sampling biases were probed by modifying the cut-off to the top 5 and 10 per cent of trades for each stock. This additional analysis suggested the results of this study are robust to these possible sampling biases.

A number of variations in research design and data partitioning were employed to determine the robustness of the main results. These variations included:

- alternative definitions of a block trade including selecting the top 5 and 10 per cent of trades by dollar value for each stock,
- extending analysis to the forty-one trades surrounding the block,
- using the tick rule to classify trades as purchases or sales,
- including block trades within five trades of another,
- partitioning trades on whether the All-Ordinaries Index increased or decreased on the day of the block trade,[3] and
- partitioning trades on the basis of the liquidity of the underlying stock (measured as the average number of trades per day).

The results were similar for all research design variations and across all partitions and hence are not reported.[4]

DATA

The microstructure database used in this study was provided by the ASX, and captured from SEATS. The database contains full details of all trades and orders submitted to the ASX and each trade record is preceded by a record which describes the market order which triggered the trade. Each record contains a date and time stamp (to the nearest hundreth of a second), as well as a unique sequence number, which permits the precise identification of the chronological order in which orders were placed and transactions executed. The data used for this study extended from 1 July 1991 to 30 June 1993.

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[2] Literature examining intraday patterns in the time series of returns is reviewed in Brown *et al.* (1992) for U.S. exchanges. Aitken *et al.* (1993) provide evidence for the ASX. Studies of intraday patterns in the time series of trade sizes are reviewed in Brown *et al.* (1992) for U.S. exchanges.

[3] The All-Ordinaries Index is a market index based on 280 of the biggest ASX stocks by market capitalization.

[4] Interested readers can obtain these results from the authors on request.

TABLE 1

DESCRIPTION OF BLOCK TRADES

	$ Value		Proportion of stocks average daily trade over prior three months	
Quartiles	Purchases	Sales	Purchases	Sales
100% maximum	21,160,000	21,469,500	293.83	309.43
75%	490,000	492,000	4.20	4.63
50% median	282,000	294,291	1.26	1.25
25%	83,710	83,804	0.33	0.34
0% minimum	1,560	1,300	0.08	0.08
Mean	339,637	355,423	5.04	6.85
SD	437,815	492,024	13.62	20.27

Table 1 profiles the block trades analysed in this study. The overall sample consisted of 4,544 block purchases and 4,554 block sales. Over the sample period there were approximately 950 stocks listed on the ASX. The block purchases were sampled from 753 stocks and block sales from 772 stocks, suggesting that the trades were sampled across a broad cross-section of stocks. Table 1 reports that the mean and median trade values were $339,637 and $282,000 respectively for block purchases, and $355,423 and $294,291 respectively for block sales. This suggests that block purchases were of approximately equal size to block sales. The profile of trades relative to average daily trade volume in Table 1 also provides some support for this inference.

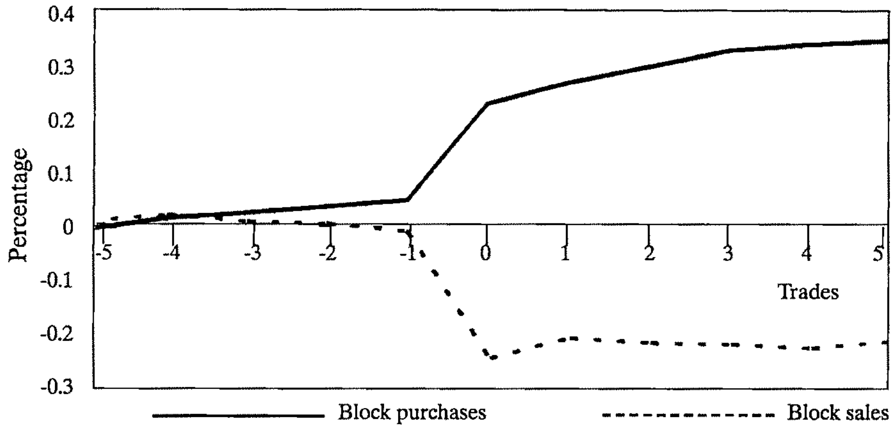
RESULTS

Table 2 and Figure 1 document the abnormal price reaction surrounding block purchases and sales in transaction time. Consistent with the transaction time analysis of Holthausen *et al.* (1990), a positive and significant abnormal price reaction (transaction return of +0.179 per cent) is associated with the block purchases, and a negative and significant abnormal price reaction (transaction return of –0.235 per cent) is associated with block sales. However, the order of magnitude of the reactions is considerably smaller than Holthausen *et al.* (1990) which documented mean reactions of 1.18 per cent and –1.23 per cent (see their Table 1 and 2).[5]

[5] There is also some weak evidence of price reaction prior to both block purchases and sales. For example, the positive abnormal return for transaction –4 for block purchases, and negative abnormal return for transaction –3 for block sales are significant at the 0.03 level. While this is consistent with information leakage associated with 'shopping of blocks' prior to on-market executions, we have focused on returns associated with information asymmetry following block trades. Second, the most significant reaction in statistical and economic terms occurs during and immediately following block trades.

FIGURE 1

CUMULATIVE ABNORMAL RETURNS SURROUNDING BLOCK TRADES



Chan and Lakonishok (1993, p. 183), who also documented smaller price reactions following block trades, conjecture that the differences in magnitudes relative to Holthausen *et al.* (1990) may have arisen from their use of a tick rule, which biases upwards the magnitude of the reaction by guaranteeing that all purchases will be associated with a positive return, and all sales a negative return. This proposition was tested in this study by repeating the entire analysis using the tick rule to determine the direction of trades. The evidence was inconsistent with the Chan and Lakonishok conjecture, as block purchases and sales were associated with an abnormal return of +0.188 per cent and –0.243 per cent. Since the magnitude of the reaction using the tick rule is approximately equal to that using the quote-based method, the difference in the magnitude of the reaction relative to Holthausen *et al.* (1990) is more likely to be caused by sample differences.

Figure 1 and Table 2 also provide evidence of asymmetry in price reaction following block trades. The abnormal return for the trade following block purchases is positive and significant for up to three trades following the block implying a continuation in price movement, while the mean return for the first trade following the block sale is negative, and significant, suggesting a price recovery. This result is in sharp contrast to the transaction time findings of Holthausen *et al.* (1990), which documents that a significant reversal follows both downtick and uptick trades in the trade immediately following the block.

The 'intriguing' and 'puzzling' asymmetry in price reaction documented in earlier studies is also evident in Table 3, which reports the results of the price impact of block trades relative to the opening and closing price on the day of the trade. The abnormal returns following block purchases and block sales measured to the close of trade are +0.188 per cent and +0.070 per cent, and are highly significant (at the 0.001 level). Again, there is strong evidence of a price continuation following block purchases and a reversal following block sales.

SUMMARY AND SUGGESTIONS FOR FURTHER STUDIES

This study provides evidence which corroborates the findings of previous U.S.-based studies. These studies document a price continuation following block purchases and

TABLE 2

TRANSACTION RETURNS SURROUNDING BLOCK TRADES

Trade (t)	Mean returns	Mean abnormal return[a] (AR)	Standard deviation of returns	Number of trades[b] (N)t	t-statistic[c]	CAR's[d]
Purchases						
-5	0.006	-0.001	0.40	1,989	-0.14	-0.001
-4	0.017	0.020	0.41	2,049	2.20	0.019
-3	0.010	0.009	0.36	2,100	1.13	0.028
-2	0.013	0.011	0.40	2,160	1.23	0.038
-1	0.007	0.008	0.40	2,234	0.99	0.047
0	0.184	0.179	0.48	2,299	17.86*	0.225
1	0.041	0.037	0.49	2,267	3.56*	0.262
2	0.026	0.029	0.38	2,170	3.52*	0.291
3	0.025	0.029	0.41	2,079	3.24*	0.320
4	0.010	0.011	0.36	2,004	1.30	0.330
5	0.006	0.006	0.48	1,932	0.54	0.336
Sales						
-5	0.0093	0.014	0.36	2,052	1.76	0.014
-4	0.0079	0.011	0.38	2,108	1.36	0.025
-3	-0.0165	-0.016	0.34	2,175	-2.19	0.010
-2	-0.0043	-0.004	0.39	2,245	-0.43	0.006
-1	-0.0144	-0.016	0.43	2,306	-1.78	-0.010
0	-0.2339	-0.235	0.50	2,378	-22.91*	-0.245
1	0.0341	0.036	0.42	2,322	4.12*	-0.209
2	-0.0054	-0.010	0.44	2,219	-1.07	-0.219
3	-0.0107	-0.005	0.38	2,133	-0.65	-0.224
4	-0.0081	-0.008	0.36	2,046	-0.94	-0.232
5	0.0126	0.011	0.34	1,965	1.47	-0.220

[a] An abnormal return for each trade is defined as the return on the experimental trade less the mean return for all trades in the stock over the sample period, which occurs in the same minute of the day as the experimental trade.

[b] The number of trades, included in the analysis, for which a control trade could be found.

[c] The t-statistic = $AR/(SD(AR)/\sqrt{N})$

[d] $CAR_t = \sum_{t=-5}^{t} AR_t$

*indicates significance at the 0.001 level.

TABLE 3

BLOCK TRADE RETURNS FROM THE OPENING AND TO THE CLOSE

	Open to block trade (%)	Block trade to close (%)
Purchases (n=2,299)		
Mean return	0.3273	0.1900
Mean abnormal return[a]	0.3409	0.1880
t-statistic[b]	12.78*	8.24*
Sales (n=2,378)		
Mean return	–0.2313	0.0803
Mean abnormal return[a]	–0.1997	0.0700
t-statistic[b]	–5.90*	3.38*

[a] An abnormal return for each trade is defined as the return on the experimental trade less the mean return for all trades in the stock over the sample period, which occurred in the same minute of the day as the experimental trade.

[b] The t-statistic $= AR/(SD(AR)/\sqrt{N})$

*indicates significance at the 0.001 level.

a price reversal following block sales, measured using the return from the block trade to the end of the trading day. Contrary to findings in those U.S. studies, the Australian evidence confirms the existence of this asymmetric behaviour in transaction time. The findings of this study were robust to a number of research design innovations and data partitions.

Given that the 'intriguing' behaviour in transaction prices also exists in Australian data, further examination is needed to attempt to explain the asymmetry with much more powerful data. Firstly, the analysis might be reworked using bid to bid, ask to ask, and spread midpoint to spread midpoint returns in order to determine whether the price behaviour is driven by bid ask bounce. Further, the limit bid and ask schedules surrounding block trades might be tracked in order to better understand the processes giving rise to the apparent asymmetry. Another possible research direction would be to attempt to explain the difference in price behaviour following block trades in transaction time, for the ASX and NYSE. These research directions may provide answers to the continuing 'puzzling' price behaviour surrounding block trades.

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APPENDIX

INSTITUTIONAL ARRANGEMENTS FOR BLOCK TRADES ON THE ASX

Under Australian Stock Exchange rules, large orders can be filled on- or off-market. The ASX rules allow trading to be conducted away from the marketplace in circumstances where the value of a single security transaction is not less than $1 million (referred to as a 'special crossing') or where the value of a multiple security transaction is not less than $2 million and each individual security comprises not less than $100,000 in value (referred to as a 'portfolio special') [Rule 2.16(13)].

With the above exception, the ASX operates a fully automated order matching system in which there are only two priorities, price and time (in that order). The automated system known as the Stock Exchange Automated Trading System (SEATS), permits brokers to enter limit and market orders (the only types of orders permitted) through dedicated terminals located in each broker's offices.

The automated trading system provides information at two levels to two different groups. Summary details including the best bid and ask and trade history data (for a full day) are available to all market participants via public 'watch' screens. The limit order book itself is not, however, available to the public. This is only accessible by registered brokers, the only parties permitted to submit, replace, amend or withdraw orders from the system.

Trading takes place on a continuous basis between 10 a.m. and 4 p.m. (Eastern Standard Time), with one- and two-hour periods prior to and following this period respectively, in which brokers may enter or amend bids and offers (without execution) and report off-market trades. Those off-market trades executed during normal trading hours are required to be reported immediately.[6] Trades that occur after 6 p.m. on any day are required to be reported to the market by no later than fifteen minutes prior to the commencement of normal trading the next day.

Off-market trades are typically transacted in circumstances where the broker is acting as principal. Approximately 30 per cent of all market activity is principal business which in turn is divided equally between investment and facilitation activities.[7]

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[6] The one exception to this rule is in respect of portfolio specials where the broker is short. Although the broker is required to report the transaction to the exchange immediately, there is a period extending until fifteen minutes prior to the commencement of the next day's trading to report the transaction to the marketplace.

[7] This information is compiled from confidential information provided by seven brokers (comprising 45 per cent of the market) who during 1994 have been participating in a research study related to these trading activities.

ABACUS, Vol. 32, No. 1, 1996

RON DAY AND JIM PSAROS

A Study of Accountants' Judgments With Respect to the Provision of Consolidated Financial Statements

The release of the Australian Accounting Standards Board AASB 1024, *Consolidated Accounts*, in September 1991 represents a fundamental shift in concept, criteria and approach. The Standard is based on the entity concept and adopts 'capacity to control' as the sole criterion for identifying related entities for the purpose of preparing consolidated financial statements. A conceptual (substance-over-form) approach is used to implement the control criterion. In essence, this approach requires accountants to make professional judgments about the existence of control based on the substance of group structures and arrangements rather than their legal form. Concerns about the subjectivity and possible variability of accountants' judgments cast some doubt on the operational effectiveness of the conceptual approach. In response to these concerns, this paper reports the results of an experiment that examines the consolidation judgments accountants make in response to a number of hypothetical scenarios. The purpose of this paper, therefore, is to provide some insights into the likely quality and reliability of consolidation judgments under the conceptual approach adopted by AASB 1024. The results indicate that accountants can be expected to exhibit broad consensus in their consolidation judgments. In addition, an analysis of the variables suggests that the degree of share ownership is the most significant factor in making such judgments. Nevertheless, other factors including the composition of the board of directors, the existence of a special arrangement, and interactions with the other variables also proved to be significant. Overall, the study provides tentative support for the conceptual approach adopted in AASB 1024.

Key words: Consolidated financial statements; Judgments.

A common feature observed in recent revisions to consolidation requirements in Australia, New Zealand, and the U.K. is an increased emphasis on notions of control as a major, or even sole, consolidation criterion.[1] This emphasis is most pronounced in

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[1] In Australia, AASB 1024 was issued in September 1991 and adopted control as its sole criterion. In New Zealand, SSAP No 8 was revised in October 1990 and adopted majority ownership or control. In the U.K., the *Companies Act* (1989) adopted new definitions of parent and subsidiary undertakings that widened the consolidation criteria to also include contractual control and either dominant influence or management on a unified basis.

Australian Accounting Standards Board AASB 1024, *Consolidated Accounts* (AASB, 1991), which adopts *control* as its sole criterion and provides a conceptual approach for its implementation. In essence, AASB 1024 requires account preparers to make judgments about the existence of control based on the substance of group structures and arrangements rather than their legal form.

A number of criticisms of this approach concern the choice of subjective rather than objective criteria and the potential difficulties that may arise from its application (Godfrey, 1990; Reilly, 1990; Walker, 1991a, 1991b, 1992). An important research question to emerge from these concerns is whether the subjective notion of control is operationally effective in terms of the quality and reliability of judgments that are made.

BACKGROUND

Alternative Consolidation Criteria and Approaches

In respect of the provision of consolidated accounts, there are a number of criteria that could be used to identify the existence of a group and determine the focus of group accounts. Possible criteria include ownership *per se*, ownership giving significant influence, ownership giving control, economic control, and responsibility for inter-entity guaranteed debt; but Leo (1987, p. 12) identifies participation and control as the two main competing criteria. *Participation* derives from beneficial ownership interests and relates to the potential of an entity to participate in an asset distribution from another entity. *Control* relates to the ability of one entity to dominate decision-making in relation to the operating and financial policies of another entity, but it is not necessarily derived from ownership interests. Leo concludes (p. 18) that it is not possible to generalize that one set of criteria is 'the best' because each is based on assumptions as to the users and uses of the consolidated accounts.

Irrespective of the preferred criteria, a further choice must be made regarding how they are to be operationalized. There are two main approaches. A *regulatory approach* sets a level of ownership or prescribes the form of control deemed to give one entity legal control over another. Alternatively, a *conceptual approach* requires an assessment of the substance of effective control in parent–subsidiary relationships, rather than by identifying any prescribed legal form. Neither approach has unequivocal support in the literature. A regulatory approach is objective and verifiable, but it can also be inflexible and avoidable (Shaw, 1976; Neuhausen, 1982; Walker, 1991a). Conversely, a conceptual approach offers more flexibility, but it invokes subjectivity (Godfrey, 1984; Walker, 1991a, 1991b, 1992) and is inherently difficult to operationalize (Ma, *et al.*, 1991).

Criteria and Approach Adopted in AASB 1024

The release of AASB 1024, *Consolidated Accounts*, in September 1991 introduced a number of reforms that changed the focus and broadened the applicability of consolidation requirements in Australia. Previous requirements prescribed criteria in the *Corporations Law* that defined the existence of a holding-subsidiary relationship for the purpose of preparing a set of group accounts.[2] Although these requirements included dual criteria of ownership and control, the emphasis was on a holding company's direct (and indirect) majority ownership interest in the issued participating shares of a subsidiary.

AASB 1024 represents a fundamental shift in concept criteria and approach. It is based on the entity concept, which views the group as a separate economic entity comprising the parent company and any other entities it can control. Consequently, *control* is adopted as the sole criterion for identifying related entities for consolidated financial statements.

Control is defined in AASB 1024, para 9, as: 'the capacity of an entity to dominate decision-making, directly or indirectly, in relation to the financial and operating policies of another entity so as to enable that other entity to operate with it in pursuing the objectives of the controlling entity'. A conceptual approach is adopted to apply the definition on the basis of *substance over form*. As a result, account preparers and auditors must make judgments about the existence of control, based on all relevant available information. To provide some guidance, AASB 1024 lists a number of factors that normally indicate the existence of control.[3] Although these factors may be useful in making a consolidation judgment, they are intended only to be indicative and not determinants of control. Consistent with the conceptual approach in AASB 1024, para. (xv) of the commentary to the Standard notes: 'Whether an entity has control of another entity will always be a question to be decided in the light of the prevailing circumstances ... [and] will involve the preparer of the financial reports in exercising professional skill and judgment'.

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[2] Section 46 of the *Corporations Law (1990)* defines a body corporate a subsidiary (in this section called the 'first body') of another body corporate if, and only if:
(a) that other body:
  (i) controls the composition of the first body's board;
  (ii) is in a position to cast or control the casting of more than one-half of the maximum number of votes that might be cast at a general meeting of the first body; or
  (iii) holds more than one-half of the issued share capital of the first-body (excluding any part of that issued capital that carries no right to participate beyond a specified amount in a distribution of either profits or capital); or
(b) the first body is a subsidiary of a subsidiary of the other body.

[3] AASB 1024 para (xvi) states:
Any of the following factors would normally indicate the existence of control by one entity of another entity:
(a) the capacity to dominate the composition of the board of directors...;
(b) the capacity to appoint or remove all or a majority of directors...;
(c) the capacity to control the casting of a majority of the votes cast at a meeting of the board of directors...;
(d) the capacity to cast, or regulate the casting, of a majority of the votes that are likely to be cast at a general meeting of another entity...; and
(e) the existence of a statute, agreement, or trust deed, or any other scheme, arrangement or device, which in substance, gives the entity the capacity to enjoy a majority of the benefits and to be exposed to the majority of the risks of that entity, notwithstanding that control may appear to be vested in another party.

Operational Effectiveness of AASB 1024

A potential criticism of AASB 1024 is the subjectivity of the substance over form approach it adopts. This approach evokes contestability, for it means there is no unique, objective criterion specified to determine whether an entity is a subsidiary and, therefore, whether accounts should be consolidated (Godfrey, 1984, p. 580). It is claimed there are some situations where determining the substance of control could be difficult and the outcome of such judgments debatable. For example, Reilly (1990, p. 46) suggests it may be difficult where control is passive, and Godfrey (1990, p. 13) contends it may be debatable where there is scope to argue that the degree of influence is significant rather than controlling. Therefore, there are two potential concerns with the conceptual approach. First, given identical circumstances, accountants may make different consolidation judgments. Second, the conceptual approach may provide scope for accountants to make opportunistic consolidation decisions using their freedom of judgment as justification.

Despite these concerns, it may be claimed that judgments, which require the application of accumulated knowledge, experience and skill lie at the heart of the professional activity accountants claim to be undertaking. Therefore, the fact that consolidation judgments are by their nature subjective is not undesirable *per se*, provided the outcomes of such judgments are quality decisions. As it is impossible to evaluate the quality of substance over form judgments against an objective criterion, this study relies on the prior work of Libby and Lewis (1982) and Ashton (1985) in using consensus as a surrogate for quality and accuracy of judgments in general and for the operational effectiveness of AASB 1024 in particular.

AASB 1024 and the Importance of Employment Sector

AASB 1024 impacts potentially on accountants and managers from various sectors of the business community (e.g., public sector, private sector, professional practice, and academia/research). Accountants or managers from any one of the sectors can reasonably claim to have a legitimate 'stake' in the content of accounting standards. Even public sector accountants may be affected directly by AASB 1024, as the Standard applies to *all* parent reporting entities (public and private). Therefore, to judge the effectiveness ('success') of AASB 1024, it is important to obtain evidence from each of the constituent groups.

From the organizational theory literature, Pfeffer and Salancik (1978, p. 2) warn: 'organizations survive to the extent that they are effective. Their effectiveness derives from the management of demands, particularly the demands of interest groups upon which the organizations depend for resources and support.' While Pfeffer and Salancik's message was intended for organizations, it seems no less appropriate for professional and government bodies. To fail to consider the views of important constituent groups is to risk losing support for accounting standards in general and AASB 1024 in particular. Thus, the success of AASB 1024 is more likely if it is interpreted similarly by accountants from different employment sectors.

Interestingly, previous accounting studies investigated whether an individual's employment sector may explain, in part, his or her perceptions and preferences in respect of accounting issues. For example, Patel (1990), Karlinsky *et al.* (1987), Teoh and Brooks (1987), and McComb (1979) provide evidence of different preferences and perceptions of accountants that seem to link to their employment sector. Each study suggests the findings may be associated with different economic concerns and perceptual fields of the participants that are partly attributable to their particular sectors of employment. It therefore seems important to determine whether the findings also hold for consolidated financial reporting. Accordingly, some of the analysis that follows in this paper is based on the employment sector of the participants.

RESEARCH METHOD

It would have been ideal to examine the operational effectiveness of AASB 1024 using real-world referents. Unfortunately, information on the consensus of consolidation judgments and on the factors used in forming such judgments is unattainable from real-world events because the circumstances of each judgment are unique. As a result, an experiment was designed to enable consolidation judgments to be examined using a number of hypothetical cases. These cases were formed from all unique combinations of selected cues operating at two discrete levels.[4]

Research Design

The experiment used a *within-subjects repeated measures* design, thus exposing each participant to more than one level of the experimental study.[5] This type of design has been used successfully in an accounting choice context by Pany and Reckers (1984), Knapp (1985), and Pasewark and Strawser (1992). The design is useful in that it facilitates the evaluation of the degree of consensus and also enables a large number of factors to be considered from a relatively small number of respondents.

Participants

The research instrument was distributed to delegates at accounting seminars organized by the Australian Accounting Research Foundation (AARF) in Melbourne, Sydney and Brisbane. The focus of the seminars was to discuss conceptual framework developments in Australian accounting. As such, it seems reasonable to presume the vast majority of the delegates had an understanding of, or at least interest in, advanced accounting issues. While participants did not have an opportunity to complete the research instrument at the seminars, they were encouraged by the seminar organizer (AARF) to complete it at a later time. Participants were thus given a package that contained a research instrument and a reply-paid envelope for its return.

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[4] This method was developed by Hoffman *et al.* (1968) to examine cue usage, consensus and consistency. It has since been extensively used in policy-capturing research in the auditing literature (Brownell and Trotman, 1988, p. 341).

[5] For a detailed and mathematical discussion of a 'within-subject design', see Kirk (1982), Ch. 6.

Three hundred and three research instruments were distributed, and 82 useable responses were returned (27 per cent). Demographic information confirmed that most participants (85 per cent) were either experienced accountants or senior managers from a wide cross-section of the Australian accounting/business community. On average, the participants had fifteen years accounting experience. In addition, 83 per cent of the participants also indicated that at least some of the work they perform is concerned with group accounting and reporting.

Research Instrument

The research instrument asked participants to assess eighteen cases in respect of whether two companies should produce consolidated financial statements. Each case contained background information and four specific variables. Each variable had two levels. The eighteen cases contain the same background information plus sixteen combinations of variables (i.e., 2^4), plus two repeat cases. The repeat cases were included to determine the consistency or reliability of the participants' responses. A comparison of responses between the original and repeat cases provides an indication of the internal consistency of the responses. Studies in the accounting literature by Agacer and Doupnik (1991) and Pasewark and Strawser (1992) have previously used this technique.[6]

Measurement of Variables

The dependent variable was the certainty that consolidated financial statements should be prepared. Participants were asked to indicate their consolidation judgments in respect of eighteen separate cases by placing an 'X' on a 127 millimetre line. Judgments could range from 0 ('should not consolidate,) to 100 ('should consolidate'). Participants could place an 'X' anywhere along the line to indicate the degree of certainty in their judgment. Line scales of this type have been used by Milliron (1985), Hite (1988), and Pasewark and Strawser (1992). Schiffman *et al.* (1981) suggest the use of an undifferentiated five-inch (127-millimetre) line is well suited to recording respondents' judgments as it provides a continuous response variable rather than a discrete scale.

Four independent variables were chosen. Three were based on the indicators of control listed in AASB 1024. A fourth variable, not listed in AASB 1024 but often associated with corporate groups, was also included — namely the existence of a substantial loan guarantee. The four independent variables and the reasons they were selected follow:

1. *The number of the investor company's senior management on the board of directors of the investee company* (herein referred to as the 'directors variable'). The importance of the composition of the board of directors is highlighted in AASB 1024 in its first three indicators of control. Paragraph (xvi) refers to the capacity to control the composition of the board, appoint or remove the majority

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[6] For a detailed discussion of reliability measures including repeat questions, see Oppenheim (1976, pp. 73–6) and Kerlinger (1964, Ch. 24).

of directors, or cast the majority of the votes of the board. Although the composition of a board does not necessarily represent capacity to control, a close linkage often exists between the two.

2. *The percentage of shares held by the investor company in the investee company* (herein referred to as the 'shares variable'). Traditionally, there has been an emphasis on majority ownership interest as an important (perhaps most important) factor in determining whether consolidation should take place. Although AASB 1024 para. (xvii) mentions it as a likely indicator, it emphasizes that under a 'control' criterion it is not share ownership that brings control but the voting rights attached to the shares. The Standard implies that, other than in atypical circumstances, capacity to control can be presumed to exist where there is greater than 50 per cent ownership of voting shares. Conversely, AASB 1024's definition of control recognizes situations where companies may have less than 50 per cent ownership but still have the capacity to control.
3. *The investor company is the guarantor of a substantial loan undertaken by the investee company* (herein referred to as the 'loan variable'). The indicators of control provided in AASB 1024 are not meant to be exhaustive and could include any factor that may add to the information set in determining the substance of control. In the presence of cross guarantees, the literature suggests that companies are more likely to provide consolidated financial statements voluntarily (Whittred, 1987), particularly where a direct guarantee exists (Mian and Smith, 1990). In this light, the existence of a financial arrangement, such as a direct loan guarantee, may in some cases be an indication of control.
4. *The existence of an operating arrangement whereby an investor company has the right to approve an investee's future borrowings and terms of operations* (herein referred to as the 'arrangement variable'). The existence of arrangements that in substance give an entity the capacity to control is alluded to in AASB 1024 para. (xvi). The type of arrangement expressed in the Standard suggests that capacity to control is likely to exist when the investor company has the capacity to dominate decision making in relation to the investee's financial and operating policies. Furthermore, this variable may indicate a non-arm's-length arrangement between two companies.

Administration of the Research

A *pilot study* was conducted to pre-test the research instrument. Copies of the pilot research instrument were provided to the audit manager of a Big 6 accounting firm. The purpose of the study and the research instrument were explained to the manager, who then distributed the instrument to staff within his office. As a result of the pilot study and suggestions received from the participants, some minor modifications were made to the instrument. Results of the pilot study were encouraging as it appeared the instrument (though necessarily lengthy) did not take an excessive amount of time to complete, was readily understood, was answered consistently, and provided an expected pattern of responses.

Participants in the *primary study* were provided with a copy of the research

TABLE 1

MEAN SCORES AND RANKS FOR EACH CASE

Case	Directors	Shares	Loan	Arrangement	Mean	Rank
Case 15	7/11	54%	Yes	Yes	97.90	1
Case 7	7/11	54%	Yes	No	97.11	2
Case 5	7/11	54%	No	Yes	96.76	3
Case 13	5/11	54%	Yes	Yes	96.25	4
Case 16	7/11	54%	No	No	95.02	5
Case 6	5/11	54%	No	Yes	93.74	6
Case 3	5/11	54%	Yes	No	91.05	7
Case 4	5/11	54%	No	No	87.62	8
Case 2	7/11	33%	Yes	Yes	82.39	9
Case 9	7/11	33%	No	Yes	78.77	10
Case 14	7/11	33%	Yes	No	71.45	11
Case 12	7/11	33%	No	No	64.96	12
Case 1	5/11	33%	Yes	Yes	58.42	13
Case 8	5/11	33%	No	Yes	54.03	14
Case 10	5/11	33%	Yes	No	39.15	15
Case 11	5/11	33%	No	No	25.64	16

Note. A score of 100 indicates complete support for consolidation, while a score of 0 indicates no support.

TABLE 2

SIGNIFICANCE OF CONSOLIDATION VARIABLES

Variable	Significance level	Omega-squared statistic
Directors	0.0001	6.3
Shares	0.0001	26.5
Loan	0.0022	#
Arrangement	0.0001	2.3
Directors/shares	0.0001	3.2
Directors/loan	ns	#
Directors/arrange	0.0079	#
Shares/loan	0.0749	#
Shares/arrangement	0.0001	1.1
Loan/arrangement	ns	#
Total		40.16

# = less than 1%.

ns = not significant.

instrument which contained eighteen cases. While the cases contained identical background information, they varied in respect of the four independent variables. For each case, participants were requested to consider all information and then make a judgment whether consolidated financial statements should be prepared.[7]

RESULTS

This study has two broad objectives: first, to consider the variables that might influence consolidation judgments; second, to assess the degree of consensus of participants' consolidation judgments. The following subsections discuss the results relating to each objective.

TABLE 3

NUMBER (AND PERCENTAGE) OF RESPONDENTS' ANOVA MODELS SHOWING SIGNIFICANCE (α=0.05) AND OMEGA-SQUARED STATISTICS

	Significance by employment sector														
	Public sector (*n*=21)			Private sector (*n*=30)			Professional practice (*n*=21)			Academia research (*n*=10)			Total (*n*=82)		
	No.	%	ω^2	No.	%	ω^2	No.	%	ω^2	No.	%	ω^2	No.	%	ω^2
Directors	8	38	4.5	11	37	7.1	10	48	4.4	7	70	15.8	36	44	6.3
Shares	15	71	33.7	20	67	23.5	17	81	35.0	4	40	5.2	56	68	26.5
Loan	3	14	#	3	10	#	1	5	#	1	10	#	8	10	#
Arrangement	3	14	1.6	7	23	2.9	8	38	2.1	4	40	3.5	22	27	2.3
Direct/shares	5	24	3	10	33	6.0	6	29	2.0	2	20	#	23	28	3.2
Direct/loan	2	10	#	0	0	#	0	0	#	1	10	#	3	4	#
Direct/arrange	0	0	#	3	10	#	1	5	#	3	30	1.2	7	9	#
Shares/loan	2	10	#	2	7	#	0	0	#	0	0	#	4	5	#
Shares/arrange	3	14	#	4	13	1.4	6	29	#	1	10	#	14	17	1.1
Loan/arrange	1	5	#	1	3	#	0	0	#	0	0	#	2	2	#
Total			43.6			41.9			44.1			26.6			40.6

# = less than 1%.

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[7] To test the validity of the responses, two measures were adopted. First, to determine whether the sequence of the cases had any bearing on the responses obtained, two batches (Batch 1, Batch 2) of the research instrument were constructed. These batches were identical other than the sequence of cases presented in them. A series of *t*-tests was conducted between the two batches for each of the eighteen cases. No significant differences were found. Second, two repeat cases were included to check the internal consistency of responses for individual cases (from Batch 1 and Batch 2). Four separate *t*-tests were conducted. One of the four *t*-tests indicated a significant difference at the 5 per cent confidence level.

Variables Influencing Consolidation Judgments

Table 1 indicates the importance that participants placed upon the shares variable in making their consolidation judgments. This result is evident when the cases are ranked by the score on the dependent measure. While each of the eight top-rated cases contains a majority of shares (54 per cent), the eight bottom-rated cases contain a 'substantial minority' (33 per cent) of the shares. In addition, the cases are ranked generally in the sequence expected. For example, the highest ranked case (no. 15) contains the variables at their highest levels. Conversely, the lowest ranked case (no. 11) contains each variable at its lowest level.

Table 2 shows the significance of the consolidation variables including two-way interactions across all cases in aggregate. The global analysis of variance (ANOVA) indicates that each main effect (directors, shares, loan, arrangement) and four of the six possible two-way interaction effects are significant.

To determine the extent to which the consolidation judgments are explained by each of the consolidation variables and their two-way interactions, omega-squared statistics were calculated (Hays 1963). Across all respondents, Table 2 shows the percentage of variance in judgment explained by the consolidation variables and their two-way interactions is 40.16 per cent. While the ANOVA indicates that all main effects and four interactions play a part in the participants' judgment models, the omega-squared statistic highlights that most of the judgments can be attributed to the shares variable (26.5 per cent) and the directors variable (6.3 per cent). The remaining variables and the two-way interactions account for less than 8 per cent of the consolidation judgment. Notably, even though the loan variable, the interaction of directors arrangement, and the interaction of shares loan were significant in the ANOVA model, each explained less than 1 per cent of the consolidation judgment.

TABLE 4

SIGNIFICANT DIFFERENCES IN CASES BY EMPLOYMENT SECTOR

	Public sector $\bar{x}$ score	Private sector $\bar{x}$ score	Professional practice $\bar{x}$ score	Academia/ research $\bar{x}$ score
Case 3		94.43		79.29
Case 4	89.69*	91.68*	89.73*	66.69
Case 6		96.38*	95.39*	82.91

Note. Mean scores that are not significantly different at the 5% confidence level are indicated by the common symbol *

Case 3: 5/11 Directors, 54% Shareholding, Loan — YES, Arrangement — NO.
Case 4: 5/11 Directors, 54% Shareholding, Loan — NO, Arrangement — NO.
Case 6: 5/11 Directors, 54% Shareholding, Loan — NO, Arrangement — YES.

To assess whether the consolidation variables had a significant effect on individual consolidation judgments, an ANOVA was performed for each participant. Participants were then grouped according to their employment sector. Table 3 shows the significance of each consolidation variable including all two-way interactions.

This table confirms the shares variable constitutes the most important explanatory factor in the judgment process. It had a significant impact on 68 per cent of all participants' consolidation judgments. The directors variable also constitutes a major explanatory factor, with 44 per cent of participants using it in their consolidation judgments. It was noteworthy that some two-way interactions also played a part in many participants' judgments. Specifically, the interaction effect of directors/shares is significant in the judgments of 28 per cent of participants. This two-way interaction was significant for more individuals than either the loan (27 per cent) or arrangement variable (10 per cent). Moreover, the interaction of shares/arrangement is significant for 17 per cent of participants.

Consensus of Consolidation Judgments

Table 3 provides evidence of a high degree of judgment consensus between participants. By employment sector, the percentage of variance accounted for by the consolidation variables ranged from 26.6 per cent (academia/research) to 44.1 per cent (professional practice). Based on their individual and aggregate variable usage, the judgments of public-sector participants, private-sector participants and professional practitioners appear similar. In aggregate, their omega-squared statistic

TABLE 5

LEVEL OF WITHIN- AND BETWEEN-EMPLOYMENT-SECTOR CONSENSUS

Panel A: Within-employment sector consensus	
Professional practice	0.590*
Private sector	0.535
Academia/research	0.494
Public sector	0.448*

Panel B: Between-employment sector consensus

	Public sector	Private sector	Professional practice
Private sector	0.495		
Professional practice	0.531	0.556	
Academia/research	0.413	0.489	0.471

Note. Mean correlations that *are* significantly different at the 5% confidence level are indicated by the common symbol*.

varied only marginally from 41.9 per cent (private sector) to 44.1 per cent (professional practice). For each group, the variable that had the greatest explanatory power was shares. The next most important explanatory variable was directors. In contrast, the omega-squared statistic for the academia/research group is 26.6 per cent. Furthermore, the directors variable for this group has the greatest explanatory power (15.8 per cent). Nevertheless, a non-parametric chi-square test did not reveal any significant differences between employment sectors, based on the frequency of the variables (including two-way interactions).

To investigate further the consensus of participants' judgments based on employment sector, individual ANOVAs were conducted for each of the sixteen cases. Statistical differences were found in three cases. Table 4 shows significant differences between the employment sectors only in cases where there was the combination of a minority of directors (5/11) with a majority shareholding (54 per cent). Only for the academia/research sector, however, are significant differences noted. For the significant cases, the academia/research sector expressed less support for the consolidation judgment than at least one of the other employment groups.

Previous information processing studies (e.g., Ashton, 1974; Campisi and Trotman, 1985; Pasewark and Strawser, 1992) place importance on the correlations of the participants' judgments in asserting the existence of consensus. This article also focuses on consensus by correlating the consolidation judgments of all possible pairs of participants. The average Pearson correlation coefficient between all participants is 0.509. This result suggests a reasonably high level of consensus.[8]

Table 5 provides a summary of the within- and between-employment sector correlations of participants' judgments. It shows the average within-employment sector correlation ranges from 0.590 (Professional practice) to 0.448 (Public sector). ANOVA procedures ($F = 2.68, p = 0.05$) and Tukey's HSD test show the consensus of participants engaged in professional practice to be significantly greater than the consensus of participants engaged in the public sector. No other significant differences were found.

Table 5, Panel B, summarizes the correlations between the judgments of participants from different employment sectors. They range from 0.413 (between public sector participants and academic/researchers) to 0.556 (between public- and private-sector participants). ANOVA procedures do not reveal any significant differences, however, between the correlations at the 5 per cent confidence level. Predictably, the between-employment sector consensus is lower than the within-employment sector consensus, though not substantially so. A consideration of the within- and between-employment sector correlations supports the view that the judgments of participants are not substantially different.

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[8] The degree of consensus in previous audit judgment research studies has varied significantly. For example, Schultz and Gustavson (1978) found a Pearson correlation of 0.12, while Srinidhi and Vasarhelyi (1986) found a Pearson correlation of 0.93. The variability can often be the function of the difficulty of the judgment requested of the auditor.

DISCUSSION

Variables Influencing Consolidation Judgments

In making their consolidation judgments, participants relied upon a range of variables. While the majority of their judgments were attributed to the more objective (and long-established) variables such as share ownership and board membership, there were less obvious variables and interactions that played some part. Variables that accounted for more than 1 per cent of the participants' judgments (based on the omega-squared statistic) and the possible reasons for their significance are discussed below.

Share ownership. Clearly the most significant variable is the percentage of shares owned. This finding may reflect that participants believe this variable is at the very core of 'capacity to control' between corporate entities. It also may indicate that some participants are still relying on previous consolidation requirements that deemed this variable to be a dominant factor (s. 46 of the *Corporations Law* 1990). Indeed, if there is a 'hangover' effect from the previous *Corporations Law* requirements and the long-standing criterion of share-ownership, it would be consistent with the notion of schema-guided processes in cognitive psychology. Bartlett (1932) describes a schema as 'an active organization of past reactions, or past experiences, which must always be supposed to be operating in any well-adapted organic response' (cited in Belkaoui, 1990, p. 1). In considering schema growth and change, Belkaoui reports a 'perseverance effect' whereby generic schemata are resistant to change even in the face of contrary evidence. Therefore, some of the participants' apparent preoccupation with the shares variable in their consolidation judgments may be attributable to the 'perseverance effect'.

Board of directors composition. When the composition of the investee company's board of directors contained a majority of the directors that were affiliated with the investor company, participants tended to judge that consolidated financial statements should be prepared. These judgments possibly were made because a company's board of directors are its ultimate decision-making vehicle. Therefore it is strongly related to (if not synonymous with) the capacity to control. In addition, the number of directors constitutes a 'neat' objective criterion to enable an accountant or auditor to make a consolidation judgment. As with the number of shares, the objectivity of the number of directors makes the consolidation judgment defensible.

Special arrangement. The existence of an arrangement also proved to be a significant explanatory variable, though it did not appear to play as much of a part in the judgment process as either the shares or directors variable. The omega-squared statistic showed that 2.3 per cent of the consolidation judgment was attributed to it. ANOVA procedures (summarized in Table 3) showed it was a significant explanatory variable for 27 per cent of the participants. Arguably, a literal interpretation of AASB 1024 suggests the arrangement as described in the cases would not usually be sufficient to require consolidated accounts be prepared.

Interaction effects. Interestingly, the study provides evidence that many participants' judgments were based on a combination of factors. For example, 28 per cent of respondents considered the existence of a majority of shares *in combination with* a majority of the directors was a significant factor. A similar interaction effect was noted when there was a majority of shares in combination with the existence of an arrangement. In this situation, the judgments of 17 per cent of the participants were influenced. Clearly a reasonable proportion of the participants appeared to make use of several of the variables, both individually and in combination, in making judgments.

The finding that a reasonable proportion of participants' judgments were based upon several of the variables, both individually and in combination, seems rational for three reasons. First, demographic information indicates that 85 per cent of the participants were either experienced accountants or managers who had an average of fifteen years accounting experience. In view of the expert nature of the participants, the judgments were consistent with schema theory. With increasing experience, McKeithen (1981) notes that a schema becomes more sophisticated. Accordingly, the schemata of experts is expected to contain more informational components than novices, be more organized, contain more links, and have a complex hierarchy. Second, a consideration of many factors is consistent with the approach in AASB 1024, which emphasizes the economic substance rather than the legal form of an inter-entity relationship. Third, Duncan *et al.* (1993) also provide evidence that both share-ownership and common board membership are required if one entity is to control another.

Consensus of Consolidation Judgments

While there is often no objective criterion to evaluate the 'correctness' of a consolidation judgment, consensus is one way of assessing the 'accuracy' of such judgments. It is therefore interesting that the results of this study indicate a high level of consensus in respect of participants' consolidation judgments. The high level of consensus is evident on two counts. First, participants have similar variables driving their judgments (Table 3). Second, there are reasonably high correlations, both within- and between-employment groups (Table 5).

The level of within-employment-sector consensus is reasonably high within each group. Nevertheless, the only statistical difference found is between the consensus levels of professional practitioners (0.590) and public-sector participants (0.448). A possible reason for this difference may be the more homogenous nature of the professional practitioners' employment and professional affiliation. Each of the professional practitioners is a member of the Institute of Chartered Accountants in Australia with more than five years accounting experience. One might also expect that most of their employment is connected with the production and/or audit of external financial statements. In contrast, public-sector participants are located in a variety of organizations and have a diverse range of professional affiliations. Moreover, their employment varies from internal audit to management and only a small part of their employment involves external financial statements. Given the diversity of public-sector participants, it is somewhat surprising to see such a high degree of consensus within that group.

Within the academic/research and private-sector groups, the demographic information indicates many similarities. The similarities were evident in respect of the nature of employment, professional affiliations, tertiary qualifications, and years of accounting experience. It also seems reasonable to believe that private-sector participants are involved in, or at least concerned with, the production of financial statements. Whereas participants within the academic/research group rarely prepare external financial statements, they all provide a similar function (i.e., teaching and research in accounting). Therefore, while academics/researchers and private-sector participants differ in nature from professional practitioners, they are relatively homogenous *within* their respective groups.

An analysis of between-employment-sector consensus highlights the relative consensus of participants' consolidation judgments. While these correlations are marginally less than those found within employment sectors, they are consistently robust (ranging from 0.413 to 0.556).

The evidence from this study suggests that the participants made similar consolidation judgments. Nevertheless, it is possible that the level of consensus found can be attributed to factors other than the 'accuracy' of the consolidation judgment. The similarities may have arisen because some of the cases contained consolidation variables at extreme levels. For example, in half of the cases, the investor company had a majority of the shares in the investee company. Indeed, the extreme cases might explain why the findings of this study are dissimilar to McComb (1979), Teoh and Brooks (1987), Karlinsky *et al.* (1987), and Patel (1990). In each of these studies, differences were found in accountants' perceptions, which seemed to be associated with their employment sector. Alternatively, participants (across most spheres of employment) may have similar views concerning the economic reality and control of a group of companies. If this latter explanation is valid, then the findings of the above studies suggest the consensus of accountants' perceptions and judgments depends upon the specific issue.

LIMITATIONS

A number of limitations must be considered in conjunction with the conclusions of this study. These are explicated in terms of specific threats to statistical conclusion, internal, external and construct validity, in accordance with the classifications provided by Cook and Campbell (1979).[9]

Specific threats to *statistical conclusion validity* from this study relate to the sample size, response rate and various assumptions underlying the statistical techniques used. A small sample size increases the risk of making incorrect no-difference conclusions about the main or interaction effects. Although there were only eighty-two participants in the experiment, statistical power and efficiency was enhanced by the use of a within-subjects repeated measures design. This enabled sixteen separate consolidation decisions to be obtained from each participant resulting in a sample of 1,312 judgments, as well as eliminating variability due to differences between participants. A related threat to sample size is the relatively low response rate of 27 per cent. This increases the risk of non-response bias as it is not possible to determine what effect the non-respondents would have had on the results. Furthermore, a Shapiro–Wilk test indicated that the data were not normally distributed. While this is a breach of one of the assumptions of ANOVA testing, ANOVA is reasonably robust even when there are variations from normality. See, for example, Emory and Cooper (1991, p. 547) and Cook and Campbell (1979, p. 42).

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[9] Cook and Campbell (1979) described four types of validity. Statistical conclusion validity refers to inferences about whether it is reasonable to presume covariation given a specified significance level and the obtained variances. Internal validity refers to the validity with which statements can be made about whether there is a causal relationship from one variable to another in the form in which the variables were manipulated or measured. Construct validity refers to the approximate validity with which we can make generalizations about higher order constructs from research operations. External validity refers to the approximate validity with which conclusions are drawn about the generalizability of a causal relationship to and across populations of persons, settings and times.

There are three main *internal validity* threats to this study. The first stems from the use of a within-subjects research design. Although there are statistical advantages in using a within-subjects design, its usage carries with it a possible learning effect. For example, as participants are exposed to repeated treatments, each exposure may impact on the outcomes of further treatments.

The second internal validity threat is in respect to possible doubts about the reliability of the dependent measure. A series of analyses were conducted to determine its reliability – one of which showed a significant difference at the 5 per cent level. Although it is difficult to assess the implications of the significant finding, it appears to be isolated. All other analyses were supportive of the reliability of the dependent measure. For example, eighteen separate *t*-tests did not indicate that the sequence of the cases had any bearing on the responses. Further, three of the four separate analyses were also supportive of the dependent measure.

The third internal validity threat concerns the timing of the experiment and selection of participants. Participants completed the experiment subsequent to their attendance at a seminar on conceptual framework developments in Australia. Their attendance may have sensitized them to the importance of factors that underlie judgments in general — thus resulting in higher levels of consensus.

The problem of attempting to represent consolidation judgments in an experimental setting results in threats to *construct validity*. Specific threats include the failure of the research operations to incorporate all the dimensions of the construct, or that the operations contain dimensions that are irrelevant to a construct. Construct under-representation is particularly pertinent in this study because of the inability to capture fully all the dimensions of consolidation decisions, given there is no explicit referent for the dependent variable. There are also limits to the number of independent variables and their levels of operation that could be represented. Therefore, this experiment represents one choice of the type and levels of the independent variables and method of operation. Other choices may have been appropriate.

Possible threats to *external validity* from the study include the inability to randomly select participants due to the nature of the experiment and the method of obtaining responses. Consequently, the results of the study may reflect, in part, the nature of the participants who undertook the study. For example, it is possible that the sample population selected from a group of participants at a seminar on conceptual framework developments may have been more committed to an understanding of advanced accounting issues and be more likely to exhibit consensus than the general population of accountants.

Given the exploratory nature of the research, future studies might consider extending the experiment by using different levels of operation for the independent variables, adopting a between-subjects design in conjunction with a within-subjects design, using a sample selection model to increase external validity such as deliberate sampling for heterogeneity,[10] or by trying to achieve greater real-world representation. In addition, future studies should focus more closely on the role that interaction effects play in the judgment processes of accountants.

CONCLUSION

A significant feature of AASB 1024 is that it does not provide a specific set of rules for the preparation of consolidated accounts. Rather, the Standard emphasizes that the decision to prepare consolidated accounts 'will involve the preparer of the financial reports ... exercising professional skill and judgment' (para. xv).

This paper has reported the result on an experiment on the consolidation judgments that accountants make in the absence of definitive rules. The results suggest that accountants from a wide range of employment sectors make similar consolidation judgments and are guided by similar variables in making their judgments. While the results are encouraging from the point of view of the likely success of substance-over-form accounting standards, it is difficult to assess the degree to which participants' judgments were influenced by the guidance of Australian Accounting Standard AASB 1024. As the Standard had been issued more than a year prior to this study, however, one might expect a high degree of familiarity with it.

In summary, against the backdrop of an Accounting Standard that is wedded to the subjective professional judgments of accountants, this study provides evidence of consensus in consolidation judgments and therefore *prima facie* support for the conceptual approach adopted by AASB 1024.

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[10] For a further discussion of the model of deliberate sampling for heterogeneity, see Cook and Campbell (1979, pp. 74–7).

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ABACUS, Vol. 32, No. 1, 1996

VIVEK MANDE AND WIKIL KWAK

Do Japanese Analysts Overreact or Underreact to Earnings Announcements?

Several recent studies have used U.S. analysts' forecasts to test for underreaction or overreaction to information in earnings announcements. These tests have provided mixed results. Evidence in Mendenhall (1991) is that analysts underreact. By contrast, results in De Bondt and Thaler (1990) show *overreaction* by U.S. financial analysts to earnings announcements. The current study contributes to this topic by examining over/underreaction by Japanese financial analysts. Test results show that Japanese analysts do not overreact to earnings announcements, market to book ratios and sales growth. Instead, there is strong evidence that Japanese analysts underreact to earnings announcements and that their underreaction is more pronounced for firms with mostly permanent earnings. Our results also show that Japanese analysts display larger forecast biases for earnings reported under U.S. GAAP as opposed to Japanese GAAP. Finally, we find that U.S. analysts discount information in earnings announcements to a larger degree (relying to a greater extent on information in past prices instead) when compared to their Japanese counterparts. Further, in contrast to their Japanese counterparts, these analysts display no optimistic bias. The results above suggest that the impact of each country's unique culture and capital norms will have to be taken into account by policy makers in evaluating the feasibility of harmonization of accounting standards.

Key words: Analysts; Earnings; Earnings forecasting.

INTRODUCTION

There is increasing evidence that market participants appear not to understand fully the implications of information in current earnings announcements. Using U.S. data, Bernard and Thomas (BT; 1989), for example, provide evidence that stock prices continue to drift upwards (downwards) for several months following earnings announcements of 'good' ('bad') news. The post-announcement stock price drift documented by these authors has evoked substantial interest because it appears to contradict market efficiency. Under efficient markets, stock prices react to

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We thank Sandra Chamberlain, Kent Daniel, Richard File, Perry Garsombke, seminar participants at the 1994 AAA meetings and two anonymous referees for their helpful comments. Viveke Mande gratefully acknowledges support from the University Committee on Research.

information instantaneously and in an unbiased fashion. However, evidence in BT is consistent with *underreaction* by U.S. market participants.[1]

Recent work on this topic has focused on whether underreaction to earnings announcements is also displayed by financial analysts who presumably are sophisticated financial statement users. Tests using U.S. data have provided mixed evidence. Results in Mendenhall (1991), for example, show that analysts underreact to earnings announcements. By contrast, De Bondt and Thaler (1990) provide evidence of analyst *overreaction*.[2] The over/underreaction hypothesis has also been tested using non-U.S. forecast data. O'Hanlon and Whiddett (1991), for example, examine the relation between forecast biases of U.K. analysts and earnings of U.K. stocks. Their results, consistent with Mendenhall, show that U.K. analysts are prone to underreaction. The current study contributes to this literature by examining over or underreaction by Japanese financial analysts to earnings announcements of Japanese companies.

The Tokyo Stock Exchange is the largest in the world. Despite this, earnings-based research on Japanese stock markets is relatively low (Chan *et al.*, 1991). Prior studies have mostly tested for Japanese stock price reaction to news announcements and for market efficiency in Japan (see Sakakibari *et al.*, 1988, for a review). There has been little work, however, on Japanese analysts' forecasts and their properties. The current study contributes by examining forecast biases of analysts of Toyo Kezai, a Japanese brokerage firm (hereafter referred to as the Japanese analysts). Our results suggest that these analysts underreact to earnings announcements of Japanese companies. Further, we find that their underreaction is larger for firms whose earnings contain predominantly permanent components.

The second objective of this article is to examine determinants of underreaction by Japanese analysts. Recent research in accounting has debated whether the harmonization of international accounting principles is desirable (see, e.g., Choi and Levich, 1991). Proponents of harmonization have argued that financial statements prepared under local GAAP present problems for investors outside that country. This view is supported by the SEC, which requires all foreign companies listed on U.S. exchanges to reconcile their earnings to U.S. GAAP. Opponents of this view, however, argue that harmonization leads to an 'artificial' restatement of financial statements and distorts the contents for investors in the local country[3] and for those outside the local country. The debate is important because information production costs associated with harmonization are significant. It is also of concern, for example, to bodies such as the NYSE, which is concerned that the exchange will lose a significant portion of the foreign securities market due to the SEC's requirement that foreign financial statements be harmonized to U.S. GAAP. We examine one aspect of this debate by testing two hypotheses which are outlined below.

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[1] The post-announcement drift (or market underreaction) does not appear to be unique to U.S. stocks. Sakakibari *et al.* (1988), for example, find evidence of stock price drift for Japanese stocks. This also appears to be true for Australian stocks (see Figure 1 in Brown, 1970).

[2] The two studies differed in their testing procedures (see Test Design and Results).

[3] Because it is too costly for firms to prepare statements under both local and harmonized GAAP, investors of the local country could also be negatively affected under harmonized GAAP.

First, we examine whether Japanese market participants (analysts) who rely on statements prepared using Japanese GAAP fare better than those who rely on statements prepared using U.S. GAAP. Second, we test whether market participants (analysts) in the U.S. and Japan interpret Japanese financial statements in the same way. Results show that: (a) the Japanese analysts underreact to a greater (lesser) degree to earnings announcements of Japanese firms that prepare statements according to U.S. GAAP (Japanese GAAP), and (b) the Japanese analysts are 'superior' to the U.S. analysts in their interpretation of earnings of Japanese firms. However, the U.S. analysts are more efficient in the use of past information for prediction and are less optimistic in their forecasts. The result in (a) suggests that Japanese analysts who rely on statements prepared using Japanese GAAP fare better than those who rely on statements prepared using U.S. GAAP. One explanation for this result is that a 'restatement' (harmonization) of accounting principles to U.S. GAAP distorts financial statements for Japanese analysts.[4] The result in (b) suggests that, even if countries prepare financial statements under identical standards, an understanding of local norms and customs is important for their correct interpretation. These results are supportive of similar conjectures made by Choi and Levich (1991), questioning the need for harmonization.

LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

In a survey paper on analysts' forecasts, Brown (1993) discusses several issues that need to be addressed by future research. He points out that accounting literature has only recently begun to examine biases in the analysts' expectational process and suggests that more research is needed on this topic before the role of the financial analyst in capital markets can be fully understood. Zmijewski (1993) also suggests an increased focus on the analysts' forecasting process. He notes that more research is needed in this area using non-U.S. forecast data. Below, we summarize prior work on analyst under and overreaction to earnings announcements.[5]

Several recent studies have tested for analysts' underreaction to earnings announcements. Mendenhall (1991), for example, tests for underreaction with a regression of analysts' forecast errors of year t–1 on the forecast errors of year t. If analysts fully assimilate information in earnings announcements, then forecast errors in adjacent years should not be correlated. However, Mendenhall finds that U.S. analysts' forecast errors are positively autocorrelated at the first lag. His explanation is that analysts underestimate the permanence of past earnings (for predicting future earnings) causing past and future forecast errors to be positively correlated. Ali *et al.* (1992) also document a first order autocorrelation using U.S. analysts' forecasts. They test Mendenhall's conjecture that the positive autocorrelation is due to the

[4] A complete analysis should examine benefits that accrue to U.S. market participants due to harmonization. However, the effects on Japanese market participants cannot be ignored. This is because firms find it costly to produce financial statements under both U.S. and Japanese GAAP (Cooke, 1993).

[5] Other forecast biases documented are that U.S. analysts are overly optimistic and are inefficient in their use of information in past stock prices (see Brown, 1993, for a survey of this literature).

underestimation of the permanence of past earnings. Specifically, using extreme (not-so-extreme) E/P ratios to proxy for the extent to which earnings are transitory (permanent), they find that positive serial correlation in forecast errors is significant for firms with predominantly permanent earnings.

In contrast to the studies above, several papers have found overreaction by U.S. analysts to earnings announcements. De Bondt and Thaler (1990), for example, examine the relation between actual changes in earnings per share (EPS) and analysts' forecasted changes in EPS for evidence of overreaction. Their results show that forecasted changes in EPS (forecast of EPS for period t minus EPS for period t–1) are too extreme when compared to actual EPS changes (EPS for period t minus EPS for period t-1). Elton *et al.* (1984) also examine forecast errors of U.S. analysts for firms with high and low earnings growth. Their results also support overreaction. They find that analysts overestimate (underestimate) future earnings for high (low) growth firms.

Abarbanell and Bernard (1992) replicate De Bondt and Thaler's study, using U.S. analysts' forecasts. Their initial results are also consistent with overreaction. However, further analysis showed that the overreaction documented could not be attributed to earnings announcements. Specifically (contrary to De Bondt and Thaler's conjecture), these authors found a significant number of extreme positive forecasted changes for firms that had *poor* earnings performances in prior years. They therefore suggested that the overreaction in De Bondt and Thaler was due to reasons (which they did not identify) unrelated to earnings announcements. In the sections that follow we use the methods in Mendenhall, De Bondt and Thaler, and Abarbanell and Bernard to examine under or overreaction in Japanese analysts' forecasts.

DATA

The study involved collecting Japanese EPS forecasts of Japanese analysts from Toyo Kezai, a prominent Tokyo-based firm that publishes the *Japan Company Handbook* (*JCH*). Toyo Kezai's analysts provide four forecasts each year of the forthcoming annual EPS which are reported in the May (Summer), August (Fall), November (Winter) and February (Spring) issues of the *JCH*. Forecasts for about 1,200 firms on the First Section representing sixty-five industries are available in each of these issues.[6] Forecast data available for the current study, however, was contained in the Spring 1989 and Spring 1990 issues of the *JCH*.[7] By selecting spring forecasts, we analyse biases in analysts' forecasts that are closest to the forthcoming earnings announcement.[8] All other Japanese data were collected from Worldscope Disclosure, distributed by Disclosure Inc., U.S.A. The database provided annual report and selected market data for years 1988, 1989 and 1990. For our tests we collected data on: (a) EPS before extraordinary items for 1988, 1989 and 1990,[9] (b) stock returns for the period 1 January 1989–1 January 1990,[10] (c) stock prices on 1 January 1989 and 1990, (d) Market to book ratios as of 31 March 1989, and (e) the five-year average rate of sales and EPS growth as of 31 March 1989. A restriction imposed was that firms were required to have a 31 March fiscal year end.[11] By imposing a fiscal year restriction, we ensure that the length of the interval between the forecast and the earnings announcement is approximately the same for all firms in our sample. To mitigate the effect of outliers, we winsorized 1 per cent of forecast errors at either tail.[12] One thousand and fifty-seven firms are represented in the final data set. Table 1 contains summary statistics on some variables used in our tests.

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[6] Traded on the First Section of the Tokyo Stock Exchange are the large and prominent stocks. The remaining stocks are on the Second Section. The industry classification used is that provided in the *JCH*.

[7] The Spring issue of the *JCH* is published in the first week of February.

TEST DESIGN AND RESULTS

Tests for Underreaction by Japanese Analysts

Following Mendenhall (1991), underreaction by Japanese analysts was tested by examining serial correlation between forecast errors of adjacent years. Below, the forecast error of year 1989 (FE_{89}) and stock return for the period January 1989–January 1990 (RET_{89}) is regressed on the forecast error of 1990 (FE_{90}).

$$FE_{i,90} = \delta_0 + \delta_1 FE_{i,89} + \delta_2 RET_{i,89} + \epsilon_{i,90} \qquad (1)$$

where FE_{90} (FE_{89}) = actual EPS for 1990 (1989) minus its forecasted amount. The dependent (independent) variable, FE_{90} (FE_{89}), was deflated by stock price on 1 January 1990 (1 January 1989).[13] If Japanese analysts systematically underestimate

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[8] The last current period forecast is one that is farthest away from the preceding earnings announcement. When making this forecast, the analyst should have had ample time to assimilate information in the preceding earnings announcement. The use of the latest forecasts would, therefore, bias results away from finding under or overreaction. This would make the rejection of the hypothesis that there is no under or overreaction a stronger result.

[9] EPS and forecast data are of consolidated earnings prepared under Japanese GAAP. Under Japanese Law, listed firms are required to present both consolidated (parent and subsidiaries) and unconsolidated (parent company only) financial statements.

[10] Stock return was computed as the percentage change in stock price plus dividend yield (dividend declared for the fiscal period ending 31 March 1989 divided by stock price on 1 January 1989) for the period 1 January 1989–1 January 1990.

[11] Chan *et al.* (1991) report that, as of 1988, 68 per cent of Japanese firms had a 31 March fiscal year-end.

[12] Results were robust to winsorization of 5 per cent of the forecast errors at either tail.

[13] Mendenhall, it is noted deflated forecast errors by price on the forecast date. One limitation of our data set, however, is that it does not have analysts' forecast dates. The publication date (5 February) of the Spring issue of the *JCH* was, however, available. In choosing the stock price on 1 January as a deflator, we assume that there is a one-month lag between the forecast and its publication. The results were also robust to deflation by the forecasted amounts.

TABLE 1

DESCRIPTIVE STATISTICS ON VARIABLES USED (ALL FIRMS)

	Quantiles				
Variables	10th	50th	90th	Mean	*SD*
$FE_{i,90}$	–0.046	0.000	0.005	–0.011	0.027
$FE_{i,89}$	–0.073	–0.001	0.007	–0.016	0.045
Mkt/BV	1.540	2.610	6.013	3.647	4.366
Sales growth	–8.556	9.00	32.126	11.384	19.847
P/E	19.779	38.950	97.112	54.302	78.559
Sales (in million yen)	25,236	92,530	438,432	167,636	189,874

Notes:

$FE_{i,90}$ = Forecast error for 1990. This was computed as the actual earnings for 1990 minus the forecasted amount which was then divided by stock price on 1 January 1990.

$FE_{i,89}$ = Forecast error for 1989. This was computed as the actual earnings for 1989 minus the forecasted amount which was then divided by stock price on 1 January 1989.

Mkt/BV = Market value on 1 January 1990 divided by book value on 31 March 1989.

P/E = Stock price on 1 January 1990 divided by 1989's earnings before extraordinary items.

Sales growth = Five-year average sales growth rate.

Sales = Yearly sales in million yen.

the permanence of earnings, then δ_1 should be positive.[14] The RET variable is included to test whether Japanese analysts use prior stock returns in their forecasts. If past returns convey 'useful' information and are used efficiently by analysts, they should be uncorrelated with subsequent forecast errors. That is, δ_2 should be zero.[15]

Ali *et al.* (1992) refine Mendenhall's test for underreaction by examining if analyst underreaction is more pronounced where accounting earnings are relatively more permanent. These authors rank firms by P/E ratios into ten portfolios.[16] Firms falling in portfolios four to eight were defined as those with relatively more permanent earnings, while firms in portfolios one to three and nine to ten were defined as those with relatively more transitory earnings. These authors then tested whether forecasts errors were positively correlated predominantly for the permanent group of firms by examining the correlation coefficient for this group. Following Ali *et al.*, we use the model below:

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[14] Note that a positive δ_1 will not result if the analysts consistently overestimate (or underestimate) earnings in each year by the same amount for each firm. This overestimation (or underestimation) would be 'captured' by the intercept term. To increase confidence in our tests that the underestimation is associated with the degree of permanence of past earnings, we also perform a more direct test (see equation (2).

[15] Research using U.S. analyst forecasts has found δ_2 to be positive and significant, suggesting an inefficient use of stock returns for making forecasts (see, e.g., Ali *et al.*, 1992).

[16] Ou and Penman (1989) provide evidence that earnings of firms with high *and* low P/E ratios contain mostly transitory earnings, while earnings of firms with P/E ratios that fall in between are more permanent. Ali *et al.* compute P/E ratios by dividing the price at the beginning of the month during which the analyst made his forecast by the previous year's earnings.

$$FE_{i,90} = \delta_0 + \delta_1 FE_{i,89} + \delta_2 RET_{i,89} + \delta_3 PDUM_{i,89} + \delta_4 [PDUM_{i,89} * FE_{i,89}] + \epsilon_{i,90} \quad (2)$$

where *PDUM* takes value 1 for firms with relatively more permanent earnings and is 0 otherwise. All other symbols are as defined previously. Firms with mostly permanent earnings were coded using the portfolio ranking procedure in Ali *et al.* P/E ratios were computed using price on 1 January 1990, and dividing it by earnings of 1989. If forecast errors are autocorrelated primarily for the permanent earnings group, then δ_3 and/or δ_4 should be positive.

Test Results on Underreaction: Panel A of Table 2 contains the results of equation (1). The independent variables explain 29 per cent of the variation in forecast errors of 1990. The intercept term is negative, suggesting that Japanese analysts' forecasts contain an optimistic bias.[17] The coefficient on forecast error is positive and statistically significant, indicating that Japanese analysts (like their U.S. counterparts) also underestimate the permanence of past forecast errors. Finally, the coefficient on RET_{89} is also positive and significant, suggesting an inefficient use of information in prior stock returns for making forecasts of EPS.

We performed several types of sensitivity tests. First, we estimated equation (1) separately for large and small firms. Firms were ranked by the market value of their equity on 1 January 1990. Those in the top (bottom) decile of all market values were classified as large (small) firms. For both large and small firms, our results supported underreaction.[18] As a second check for sensitivity of results, we estimated equation (1) by industry, *I*. To ensure that there were adequate observations for estimation of the model by industry, it was required that each industry have at least twenty-five firms. Twelve industries met the restriction. Test results supported analyst underreaction for each of these industries.[19] As a final check for sensitivity we tested whether the means of the twelve estimated industry coefficients associated with FE_{89} and RET_{89} were equal to zero (i.e., $\Sigma_{I=1}^{12}\delta_{1I})/12 = 0$ and $(\Sigma_{I=1}^{12}\delta_{2I}/12 = 0)$.[20] Under the assumption that the industry coefficients are an independent estimate of the relation specified in equation (1), this test will mitigate the problem of cross-sectionally correlated forecasted errors.[21] The hypotheses were rejected at the .01 level of significance. The mean estimates of δ_1 and δ_2 and their associated *t*-values (in parentheses) were 0.00068 (7.070) and 0.0283 (3.060) respectively. The tests were replicated under the restriction that each industry should have at least fifteen firms.

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[17] O'Brien (1988) finds a similar result using U.S. analysts' forecasts.

[18] The underreaction was stronger for small firms. δ_1 for the small and large firms (*t*-values in parentheses) was 0.001 (12.37) and 0.0003 (7.04) respectively.

[19] The coefficient, δ_1, was similar in magnitude (about 0.001) for most of the industries.

[20] The standard errors used to test the hypotheses are calculated as the standard deviation of the twelve estimated coefficients divided by $\sqrt{12}$.

[21] Economy-wide shocks, for example, can cause cross-sectional correlations between forecast errors. These correlations can cause the *t*-statistics in Table 2 to be overstated.

TABLE 2

RESULTS OF EQUATION 1

Panel A: Regression Relating Forecast Error of 1990 to Forecast Error and Stock Return of 1989

Model: $FE_{i,90} = \delta_0 + \delta_1 FE_{i,89} + \delta_2 RET_{i,89} + \epsilon_{i,90}$

Independent variable	Parameter estimate	t-value
Intercept	–0.0027	–1.237
$FE_{i,89}$	0.00044	20.624***
$RET_{i,89}$	0.0219	4.204***
F-value	221.273	
Prob>F	0.0001	
Adj.R^2	0.2944	
No. of observations	1,057	

Panel B: Regression Relating Forecast Error of 1990 to Forecast Error and Stock Return of 1989 For Firms with Permanent and Transitory Earnings

Model: $FE_{i,90} = \delta_0 + \delta_1 FE_{i,89} + \delta_2 RET_{i,89} + \delta_3 PDUM_{i,89} + \delta_4 [PDUM_{i,89} * FE_{i,89}] + \epsilon_{i,90}$

Independent variable	Parameter estimate	t-value
Intercept	–0.0042	–1.734*
$FE_{i,89}$	0.000379	15.938***
$RET_{i,89}$	0.0206	4.010***
$PDUM_{i,89}$	0.00428	1.82*
$PDUM_{i,89} * FE_{i,89}$	0.000256	5.103***
F-value	119.798	
Prob>F	0.0001	
Adj.R^2	0.3103	
No. of observations	1,057	

***/**/* = Significant at $\alpha < 0.01/0.05/0.10$.

Notes:

$FE_{i,90}$ = Forecast error for 1990. This was computed as the actual earnings for 1990 minus the forecasted amount which was then divided by stock price on 1 January 1990.

$FE_{i,89}$ = Forecast error for 1989. This was computed as the actual earnings for 1989 minus the forecasted amount which was then divided by stock price on 1 January 1989.

$RET_{i,89}$ = Stock return for the period 1 January 1989 to 1 January 1990.

PDUM is a dummy variable that takes value 1 for firms with permanent earnings and is 0 otherwise.

Twenty-three industries met this requirement. Hypotheses tests on the twenty-three industry coefficients provided results (not reported here) that were almost identical to those above.

Panel B of Table 2 contains results of equation (2). The independent variables explain about 31 per cent of the variation in forecast errors of 1990. The coefficients of interest are on the intercept dummy (PDUM) and the slope dummy (*PDUM* * *FE*) associated with permanent earnings. These coefficients are positive and statistically significant. They confirm that underraction is more pronounced for firms with mostly permanent earnings. This result may also be explained from a measurement error perspective. Freeman and Tse (1992), for example, argue that analysts focus to a greater extent on firms with mostly permanent earnings changes. Analysts' earnings forecasts for firms with mostly transitory earnings are therefore likely to contain greater measurement error (e.g., forecasts for firms with mostly transitory earning may not be updated by analysts as frequently as those for firms with mostly permanent earnings). This would cause the serial correlation coefficient to be biased downwards for these firms (relative to firms whose earnings are largely permanent).[22]

Results in Table 2 (Panels A and B) are generally consistent with those documented by Ali *et al.* and Mendenhall with U.S. analysts.[23] In the next section we test for rationality of analysts' forecasts using a design suggested by De Bondt and Thaler (1990).

Tests for Overreaction by Japanese Analysts

Following De Bondt and Thaler, we examine the relation between actual changes and forecasted changes using the following model:

$$A_{i,90} - A_{i,89} = \alpha_1 + \alpha_1 [F(A_{i,90}) - A_{i,89}] + \epsilon_{i,90} \qquad (3)$$

where A is the EPS, $F(A)$ is the forecasted EPS, i denotes the firm, while 90 and 89 index years 1990 and 1989. The dependent and independent variables were deflated by stock price on 1 January 1989.

If analysts make 'rational' forecasts, then α_0 should be zero and α_1 should be one. With U.S. analysts' forecasts, research has found that α_0 is negative and α_1 is less than one. As noted earlier, a negative α_0 suggests that analysts are overly optimistic in their forecasts. An α_1 of less than one supports overreaction because it suggests that the forecasted EPS changes are too extreme relative to actual changes. However, Abarbanell and Bernard (1992), point out that the estimated α_1 could also be less than one for reasons unrelated to overreaction to *earnings*. As an example, they point out that *random* measurement error in forecasts could cause the estimated α_1 to be biased downwards from its true value of one. They propose that overreaction should be tested instead by examining whether forecasts are too high (low) for firms whose recent past earnings performance has been very good (bad). Following Abarbanell and Bernard we also estimate the model:

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[22] The coefficients associated with FE_{89} in Tables 2 and 3, while statistically significant, appear to be of small economic consequence. Using FE_{89} and the estimated δ_2 in Table 2 we were able to *incrementally* predict (i.e., over and beyond the amount predicted using RET_{89}) between 0.1 per cent to 24 per cent of FE_{90}, the forecast error of year 1990 denominated in units of stock price. Results using estimates in Table 3 provided similar results. We, however, caution the reader that the magnitudes of the estimated coefficients in Tables 2 and 3 (and hence predictions of FE_{90}) are likely to be significantly affected by measurement error in the analysts' earnings forecasts. Brown *et al.*, (1987), for example, show that in their study measurement error in earnings forecasts biases coefficients downwards significantly (see also footnote 26). The coefficients on FE_{89} are also likely to be biased because we constrain them to be cross-sectionally constant.

[23] These results were unchanged in the undeflated version of the regression and when the dependent and independent variables were deflated by $F(A_{i,90})$ and $F(A_{i,89})$.

$$A_{i,90} - F(A_{i,90}) = \beta_0 + \beta_1 [A_{i,89} - A_{i,88}] + \epsilon_{i,90} \tag{4}$$

The dependent and independent variables have been deflated by price on 1 January 1990 and 1 January 1988 respectively.[24]

The dependent variable is the analyst forecast error for year 1990, which is explained by the earnings change in 1989. If a positive change in 1989's earnings leads analysts to overreact, then forecast error for 1990 will be negative. The overreaction hypothesis, therefore, predicts that β_1 will be negative. On the other hand, if analysts underreact, β_1 is predicted to be positive. Abarbanell and Bernard find that β_1 is positive, supporting underreaction. They conclude that the overreaction documented in De Bondt and Thaler is possibly due to measurement error or other reasons which they left for future research to identify.

Test Results on Overreaction: Table 3 (Panel A) contains test results for equation (3). The coefficient on forecasted change, *FC*, is less than one. The *t*-statistic reported therein tests whether the coefficient on *FC* is equal to 1. It is strongly rejected, indicating that analysts overreact to earnings announcements. This conclusion, however, is not supported by test results for equation (4) in Table 3 (Panel B). The coefficient, β_1, is positive and statistically significant, indicating that for firms with positive (negative) earnings changes in 1989, analysts forecasts for 1990 are below (above) the actual earnings announced. This suggests underreaction rather than overreaction. Our conclusion, similar to Abarbanell and Bernard, is that analyst overreaction documented in Table 3 (Panel A) is unrelated to earnings announcements. As a check for consistency, we also estimated regressions in equations (3) and (4) by industry and for small and large firms separately. The results remained unchanged.

In summary, results in this section provide little evidence in support of overreaction. We find that the overreaction documented in Table 3 (Panel A) is not related to past earnings. There remain two possible explanations for the result in Panel A of Table 3. One is that there are factors other than those examined here that are responsible for analyst overreaction.[25] A second possibility, proposed by Abarbanell and Bernard, is that the coefficient on forecasted change is less than one because of measurement error in forecasts rather than overreaction.[26] By contrast to results on overreaction, empirical evidence in support of underreaction to earnings announcements is strong. The remaining sections extend the literature by examining

[24] Results were unchanged in the undeflated version of the regression and when the dependent and independent variables were deflated by $F(A_{i,90})$ and $A_{i,88}$.

[25] We found very weak evidence that analysts' overreaction was related to market to book ratios (see Rosenberg *et al.*, (1985) and no evidence that it was related to past sales growth (see, Lakonishok *et al.*, 1992).

[26] A lack of consistency in the definition of earnings per share being forecasted across firms and years and variation across individual analysts in forecasting earnings are some reasons for expecting measurement error in analysts' earnings forecasts.

TABLE 3

TEST RESULTS ON OVERREACTION

Panel A: Regression Relating Actual EPS Change to Forecasted EPS Change
Model: $A_{i,90} - A_{i,89} = \alpha_0 + \alpha_1[F(A_{i,90}) - A_{i,89}] + \epsilon_{i,90}$

Independent variable	Parameter estimate	*t*-value	*F*-value	Prob >*F*	Adj. R^2
Intercept	–0.00017	–0.0435	84.268	0.0001	0.0726
$[F(A_{i,90}) - A_{i,89}]$	0.1291	9.18***			

Panel B: Regression Relating Forecast Error of 1990 to Earnings Change for 1989
Model: $FE_{i,90} = \beta_0 + \beta_1[A_{i,89} - A_{i,88}] + \epsilon_{i,90}$

Independent variable	Parameter estimate	*t*-value	*F*-value	Prob >*F*	Adj. R^2
Intercept	–0.0174	–12.412***	9.122	0.0026	0.0072
$[A_{i,89} - A_{i,88}]$	0.000186	3.02***			

*** (**) = Significant at $\alpha < 0.01$ (0.05).

Notes:

A_{it} = Actual earnings for firm *i* in period t.

$F(A_{it})$ = Forecast of EPS for firm *i* in period t.

$FE_{i,90}$ = Forecast error for 1990. This was computed as the actual earnings for 1990 minus the forecasted amount which was then divided by stock price on 1 January 1990.

two factors (viz., accounting standards and 'culture') as potential determinants of underreaction by Japanese analysts.

GAAP AND CULTURE AS DETERMINANTS OF UNDERREACTION

Cooke (1993) examines differences between U.S. and Japanese GAAP. Some major differences concern the consolidation of financial statements, accounting for deferred taxes, R&D and goodwill. Cooke examines the quantitative effect of these differences on Japanese profits. For a sample of Japanese firms, Cooke finds that Japanese profits computed using Japanese GAAP are smaller than those using U.S. GAAP.[27] Cooke concludes that profits and losses under Japanese GAAP are likely to be more 'prudent' than under U.S. GAAP. Choi and Levich (1991) point out that each country adopts accounting standards and coping mechanisms (e.g., prudence) that reflect 'the historical structure of a country's regulatory environment, the relationship that each regulatory body has with its constituencies and other capital market norms unique to each country'. This view suggests that the adoption of U.S. GAAP by Japanese firms would distort financial results for Japanese market participants and for those outside the country.

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[27] A reconciliation statement was obtained by letter from these firms by Cooke.

Lowe (1990) examines distortions that occur on account of consolidation of Japanese statements according to U.S. GAAP. Consolidation of corporate groups under U.S. GAAP is based on percentage of share ownership. In Japan, however, corporate groups (or 'keiretsus') are seldom based on percentage of share ownership.[28] Keiretsus, therefore, do not prepare consolidated statements. Instead, these are prepared (erroneously) for firms that have share ownership in some other entity but may be otherwise weakly related to that entity. According to Lowe, the result is an artificial restatement of financial statements for firms that are legally but not economically tied to each other.

But even if Japanese GAAP and U.S. GAAP were identical in all respects, an understanding of local norms and culture can still be expected to be important for the correct interpretation of financial results. Choi and Levich interview prominent market traders on international exchanges on the issue of harmonization of international accounting. Their results show that foreign investors who familiarize themselves with 'local environmental norms' are likely to fare better than those who rely only on the restated results. They conclude that harmonization of financial statements, by itself, is not enough to remove the problems associated with accounting diversity.

The above discussion leads to:

H1: The use of U.S. GAAP by Japanese firms attenuates forecast biases of Japanese analysts.

H2: Japanese analysts interpret earnings announcements of Japanese firms differently from their U.S. counterparts.

Evidence in support of H1 would show the importance of accounting standards as a determinant of analyst rationality. Evidence in support of H2 would show that local norms and cultural factors affect interpretation of financial results.

Test Results

The sample used to test H1 consists of an experimental group of all Japanese firms on the First Section of the Tokyo Stock Exchange in 1989 that prepared their financial statements using U.S. GAAP.[29] Data on analysts forecasts for these firms (twenty-five in all) were collected from the *JCH* for the years 1989, 1990 and 1991, while data on earnings and stock returns were obtained from Worldscope Disclosure.[30] Results associated with the experimental group are compared with those of two control groups that prepare financial statements using Japanese GAAP. The first control group consisted of twenty-five Japanese firms matched by industry and size. The procedure did not, however, provide a close match in several cases. The matched control firms (using Japanese GAAP) were smaller and less prominent than those in the experimental group (using U.S. GAAP). This is because Japanese firms that use U.S. GAAP tend to be industry leaders. Where the industry match was several times smaller (or where no industry match was available), we found the best possible match from a related industry. Summary statistics on the experimental and the matched control group are in Table 4. The table indicates that, despite our best efforts, the firms are not well matched by size. Therefore, our results are compared with those of a second control group consisting of all firms in our sample that used Japanese GAAP (i.e., all firms in Table 2).

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[28] A keiretsu is a corporate grouping that includes trading, banking, manufacturing and insurance firms. Firms within a keiretsu are not legally tied together but have strong economic ties.

[29] These firms only reported their financial results using U.S. GAAP. The *JCH* flags these firms with a special mark.

[30] Because the sample of forecasts available for tests of H1 and H2 was small, data for 1991 were also obtained.

TABLE 4

SUMMARY STATISTICS ON EXPERIMENTAL AND MATCHED CONTROL GROUPS

Descriptive Statistics on Variables Used (Experimental Group of 25 Firms Using U.S. GAAP)

	Quantiles				
Variables	10th	50th	90th	Mean	*SD*
FE_{it}	–0.060	0.000	0.008	–0.007	0.019
Mkt/BV	1.332	1.880	3.158	2.021	0.643
Sales growth	–5.924	5.48	30.288	8.183	13.292
P/E	16.492	26.220	50.048	28.893	21.456
Sales (in million yen)	26,944	79,856	824,597	259,068	277,387

Descriptive Statistics on Variables Used (Matched Control Group of 25 Firms Using Japanese GAAP)

	Quantiles				
Variables	10th	50th	90th	Mean	*SD*
FE_{it}	–0.030	0.000	0.010	–0.002	0.012
Mkt/BV	1.175	1.820	3.899	2.333	1.383
Sales growth	–13.420	8.38	32.375	6.363	14.001
P/E	11.943	28.995	88.528	40.641	38,436
Sales (in million yen)	37,353	163,665	662,773	233,532	238,367

Notes:

FE_{it} = Forecast error for year t=1988–1990. This was computed as the actual earnings for year t minus the forecasted amount which was then divided by stock price on 1 January of year t.

Mkt/BV = Market value on 1 January 1990 divided by book value on 31 March 1989.

P/E = Stock price on 1 January 1990 divided by 1989's earnings before extraordinary items.

Sales growth = Five-year average sales growth rate.

Sales = Yearly sales in million yen.

H1 is tested by estimating the model below for each group of Japanese firms:

$$FE^s_{it} = \alpha^s_0 + \alpha^s_1 FE^s_{it-1} + \alpha^s_2 RET^s_{it} + \epsilon^s_{it} \qquad (5)$$

where $s = a$ for firms using U.S. GAAP and $s = j$ for firms using Japanese GAAP. If analyst underreaction to U.S. GAAP is more pronounced, α^a_1 wil be greater than α^j_1.

Results for equation (5) are in Table 5. They show that greater forecast biases are associated with Japanese firms using U.S. GAAP. The intercept term for U.S. GAAP firms is twice as large in absolute magnitude and is also statistically different from

TABLE 5

TESTING HYPOTHESIS (H1)

Regression Relating Forecast Error of Year t to Forecast Error and Stock Return of Year t–1 for 25 Firms Using U.S. GAAP

Independent variable	Parameter estimate	*t*-value
Intercept	–0.0038	–1.628*
FE_{it-1}	0.3367	2.993***
RET_{it-1}	0.0223	2.666***
F-value	8.999	
Prob>*F*	0.0005	
Adj. R^2	0.24	
No. of observations	50	

Regression Relating Forecast Error of Year t to Forecast Error and Stock Return of Year t–1 for Firms Using Japanese GAAP

Independent variable	Parameter estimate	*t*-value
Intercept	–0.002	–1.573*
FE_{it-1}	0.002	0.013
RET_{it-1}	0.0038	1.507*
F-value	1.308	
Prob>*F*	0.2883	
Adj.R^2	0.02	
No. of observations	50	

***(*) = Significant at $\alpha < 0.01$ (0.10).

Notes:

FE_{it} = Forecast error for year t. This was computed as the actual earnings for year t minus the forecasted amount which was then divided by the stock price on 1 January of year t.

FE_{it-1} = Forecast error for Year t–1. This was computed as the actual earnings for year t–1 minus the forecasted amount which was then divided by stock price on 1 January of year t–1.

RET_{it-1} = Stock return for the period 1 January t–1 to 1 January t.

that of the control groups consisting of matched firms and all firms that use Japanese GAAP ($Z = 5.7, p > .0001$ and $Z = 10.2, p > .0001$ respectively).[31] The result suggests that Japanese analysts following U.S. GAAP firms are significantly more optimistic than those following Japanese GAAP firms.[32] Results also show that Japanese analysts underreact to earnings under both U.S. and Japanese GAAP. However, the degree of underreaction to the permanence of past forecast errors is dramatically more pronounced for Japanese firms using U.S. GAAP. The coefficient on past forecast error is 3,300 (1,650) times larger than that for the control group consisting of all firms (matched firms) using Japanese GAAP. The test that the coefficient is equal to that on the matched and all-firm control group is strongly rejected ($Z = 12.17, p > 0.0001$ and $Z = 21.3, p > 0.0001$ respectively). The result suggests a strong association between accounting standards and biases in analysts' forecasts. Finally, the coefficient on past returns for the U.S. GAAP firms is about the same magnitude and is not statistically different from the control group consisting of all firms using Japanese GAAP ($Z = 1.1, p = .2714$). It is, however, about five times larger than that of the matched control group. The last result is not consistent with expectations for the reason that the matched control consists of smaller firms where analyst scrutiny is likely to be less intensive. This should suggest a less efficient use of past returns for forecasting future earnings for the matched group.[33] Overall, these results suggest that Japanese analysts who rely on financial statements prepared using Japanese GAAP appear to fare better than those who rely on statements reported using U.S. GAAP.[34] They are consistent with conjectures in Choi and Levich (1991) that the use of U.S. GAAP distorts financial statements of Japanese firms (i.e., leads to larger forecast biases).[35]

The tests above assume that differences in the experimental and control group results can be attributed to differences in the GAAP used. One concern is that the underreaction coefficient might be affected by other 'omitted variables'. Notably, of the twenty-five firms using U.S. GAAP only ten are listed on the U.S. exchanges (NYSE, NASDAQ and OTC). Of these, two are OTC stocks that are restricted from raising capital in U.S. markets. Therefore, ease of access to U.S. capital markets is not likely to be a significant omitted variable because it affects only eight of these firms. A second omitted variable considered is firm size. Firms that use Japanese GAAP tend to be smaller than those using U.S. GAAP. However, contrary to our results, this predicts a stronger underreaction to earnings of Japanese GAAP firms (see Test Results on Underreaction, which show stronger underreaction to earnings of small firms). Another difference between the two groups of firms is that firms using U.S. GAAP tend to be more prominent (e.g., several are industry leaders). However, this also should bias results away from our hypotheses because one should expect smaller forecast biases for the more prominent firms. Finally, we could rule out industry as an omitted variable because, as noted in those results, this variable does not appear to affect the degree of underreaction.

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[31] The Z test statistic was computed as $(\alpha_0^{\alpha}-\alpha_0^{j})\sqrt{\sigma^{2a}/N^a + \sigma^{2j}/N^j}$, where σ^a and σ^j are the estimated standard deviations of the coefficients while N^a and N^j are the number of observations in the U.S. GAAP and Japanese GAAP groups, respectively.

[32] Future work is needed to examine differences in incentives for forecasting by analysts who follow firms using U.S. GAAP versus those for analysts who follow firms using Japanese GAAP.

[33] On the other hand, several firms in the experimental group belong to a keiretsu. It might be that earnings for these firms are more difficult to predict because of their complex economic ties to other members in the group.

[34] This assumes that there is a positive correlation between the degree of underreaction and stock returns.

[35] An alternative explanation is that Japanese analysts are unfamiliar with U.S. GAAP. One should, however, expect that Japanese analysts will become more familiar with U.S. GAAP over time. We ran the regression above, by year. Contradictory to the prediction, we found that the coefficient on lagged forecast error for year 1991 was about the same magnitude as that for 1990. This result is, however, to be viewed with caution because the test period is fairly short. On the other hand, one year could constitute a fairly long learning period for a sophisticated market participant (analyst). Besides, Japanese analyst familiarity with U.S. GAAP can also be assumed because Japanese firms have been using U.S. GAAP for several years.

The sample used to test H2 consist of twelve Japanese firms for which U.S. analysts' forecasts were available on the Value-Line Investment Surveys (hereafter referred to as the U.S. analysts' forecasts). Of these firms, three belong to the automotive industry, while the remainder manufacture electronic products. With the exception of two firms (Toyota and Nissan), all of the remaining firms used U.S. GAAP for financial reporting. For eleven of these firms, Value-Line and Toyo Keizai forecasts were consistently measured on U.S. and Japanese GAAP. An exception was Nissan, for which Toyo Keizai provided forecasts of Japanese GAAP based earnings while Value-Line provided forecasts of the U.S. GAAP based numbers. This firm was, therefore, deleted from our analyses.

Data collected was for the years 1989, 1990 and 1991.[36] To be consistent with the Japanese sample, we used the latest forecast made by Value-Line prior to the earnings announcement. Table 6 contains summary statistics for this group of firms.

The model below is estimated for each analyst group.

$$FE^s_{it} = \alpha^s_0 + \alpha^s_1 FE^s_{it-1} + \alpha^s_2 RET^s_{it} + \epsilon^s_{it} \qquad (6)$$

where $s = a$ for the U.S. analysts and $s = j$ for the Japanese analysts. If the U.S. analysts' underreaction is more pronounced than Japanese analysts, then α^a_i will be greater than α^j_1.

Results in Table 7 show that, relative to their Japanese counterparts, U.S. analysts use of past returns for predicting future earnings. The coefficient on *RET* is significantly smaller for the U.S. analysts than for the Japanese analysts ($Z = 13.5$, $p > 0.0001$). The U.S. analysts also show no optimistic bias in their forecasts of EPS of Japanese firms. By contrast, Japanese analysts' forecasts reveal a bias that is significantly more optimistic than that of the U.S. analysts' ($Z = 16.83$, $p > 0.0001$). One explanation consistent with the latter result is that the Japanese analysts add an

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[36] Forecast and earnings data collected were per American Depository Receipt (ADR). These were restated on a per share basis using ADR to share ratio provided by Value-Line. They were then converted into yen using the translation rate at the end of each fiscal year.

TABLE 6

DESCRIPTIVE STATISTICS ON VARIABLES USED (11 FIRMS FOLLOWED BY U.S. AND JAPANESE ANALYSTS)

	Quantiles				
Variables	10th	50th	90th	Mean	*SD*
FE^{a}_{it}	–0.047	0.000	0.037	–0.001	0.028
FE^{j}_{t}	–0.050	–0.001	0.017	–0.007	0.022
Mkt/BV	1.088	1.530	2.367	1.630	0.439
Sales growth	–8.534	5.01	40.035	11.457	17.278
P/E	13.314	24.225	36.642	24.155	8.355
Sales (in million yen)	32,817	78,855	501,551	177,828	185,207

Notes:

FE^{s}_{it} = Forecast error for t = 1988–1990 for $s = a$ (U.S. analysts), j (Japanese analysts). This was computed as the actual earnings for year t minus the forecasted amount which was then divided by stock price on 1 January of year t.

Mkt/BV = Market value on 1 January 1990 divided by book value on 31 March 1989.

P/E = Stock price on 1 January 1990 divided by 1989's earnings before extraordinary items.

Sales growth = Five-year average sales growth rate.

Sales = Yearly sales in million yen.

optimistic bias to their forecasts to remain in favour with Japanese corporate management on which they rely for information for making forecasts.[37] The U.S. analysts, who possibly have weaker ties with Japanese corporate managers, have lesser incentives to publish optimistic forecasts.

A direct comparison of analysts' reports for these firms also showed support for the findings above.[38] For five of these firms, the U.S. and Japanese analysts clearly differed in their forecasts of future earnings. In all these cases, the Japanese analysts were relatively more optimistic than their U.S. counterparts. A case in point concerns forecasts of Fuji Photo Film. The Japanese analyst predicts that for Fuji 'profits will rise', that a 'dividend hike is likely', and that there is 'favourable demand for film'. For the same year, the U.S. analysts' report is pessimistic. It states that for Fuji there will be 'negative profit growth' and while 'demand is rising, competition is depressing margins'. These reports also indicate a greater use of past returns by the U.S. analysts for forecasting. For ten firms, the U.S. analysts' reports stated the use of past prices (returns) to predict future performance. For example, for Toyota, the

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[37] This conjecture needs to be pursued by future work. Interestingly, Francis and Philbrick (1993) provide evidence that Value-Line analysts add an optimistic bias to their forecasts of EPS to remain in favour with the managers of U.S. companies.

[38] These reports are available in *JCH* and the Value-Line Surveys.

TABLE 7

TESTING HYPOTHESIS 2 (H2)

Regression Relating Forecast Error of Year t to Forecast Error and Stock Return of Year t–1 for U.S. Analysts of 11 Firms

Independent variable	Parameter estimate	*t*-value
Intercept	–0.00004	–1.237
FE_{it-1}	0.4806	2.204***
RET_{it-1}	–0.000094	–1.039
F-Value	2.479	
Prob > *F*	0.1009	
Adj. R^2	0.12	
No. of observations	22	

Regression Relating Forecast Error of Year t to Forecast Error and Stock Return of Year t-1 for Japanese Analysts of 11 Firms

Independent variable	Parameter estimate	*t*-value
Intercept	–0.0084	–3.661***
FE_{it-1}	0.078	0.267
RET_{it-1}	0.018	2.870***
F-Value	4.575	
Prob > *F*	0.0239	
Adj. R^2	0.25	
No. of observations	22	

*** = Significant at $\alpha < 0.01$.

Notes:

FE_{it} = Forecast error for year t. This was computed as the actual earnings for year t minus the forecasted amount which was then divided by the stock price on 1 January of year t.

FE_{it-1} = Forecast error for year t-1. This was computed as the actual earnings for year t-1 minus the forecasted amount which was then divided by the stock price on 1 January of year t-1.

RET_{it-1} = Stock return for the period 1 January t-1 to 1 January t.

U.S. analyst predicted limited capital appreciation in the future based on his observation that the stock has 'hardly moved in price in the past year, following an almost fivefold rise from 1985 to 1988'. On the other hand, none of the corresponding Japanese analysts' reports for the same period indicated the use of past prices (returns) for earnings prediction.

The final result in Table 7 is that both the U.S. and the Japanese analysts underreact to earnings announcements. However, the U.S. analyst underreaction is about seven times more pronounced and is statistically different from that of the Japanese analysts ($Z = 5.17$, $p > 0.0001$). The result suggests that these analysts discount information in current earnings to a larger degree (relying to a greater extent on past price information instead) when compared to the Japanese analysts. It is consistent with the U.S. analysts being informationally disadvantaged about earnings (possibly on account of having weaker ties with the Japanese managers) when compared to their Japanese counterparts. Overall, these results support Choi and Levich (1991), who argue that 'cultural' factors (such as ease of access to managers,) will lead U.S. and Japanese analysts to interpret financial statements differently.

An important issue with respect to the result above is whether the degree of underreaction is related to the length of each analyst's forecast horizon. The analyst who provides the most current forecast has a timing advantage over his counterpart (see, e.g., O'Brien, 1988) and should, therefore, display a smaller underreaction. To determine the forecast horizon of the U.S. and Japanese analysts, we first obtained the publication dates of the relevant issues of the Value-Line Surveys and *JCH*. For the firms in the automotive industry, Value-Line's forecasts were published in the last week of December. For the remainder of the sample, the forecasts were published in the second week of February. Forecasts of Toyo Keizai, as noted earlier, were published in the first week of February. Value-Line and Toyo Keizai were then contacted to find out how many days prior to the publication their analysts made their forecast. They indicated that Value-Line's forecasts were made about seven days prior to the publication date, while for Toyo Keizai the lag was longer. These analysts made their forecasts about a month and two weeks prior to their publication.[39] This suggests that for the firms in the automotive industry, both Value-Line and Toyo Keizai analysts' forecasts were made about the same time. For the remaining firms, Value-Line's forecasts were made a month later. Because of Value-Line's timing advantage, test results should be biased against finding a stronger underreaction to earnings announcements by their analysts. This makes the finding of a larger U.S. analyst underreaction a strong result.

CONCLUSION

This study tested for Japanese analyst underreaction and overreaction to earnings announcements of Japanese firms. The sample used consisted of data for the years 1989 and 1990. Earnings forecasts used were those made by analysts of Toyo Kezai. The generalizability of our results to other time periods and analysts should therefore be made with caution. The results of our study in general do not support analyst overreaction. Specifically, we find that analyst overreaction documented using De Bondt and Thaler's (1990) test cannot be attributed to earnings announcements. One possibility is that results indicating overreaction are a consequence of measurement error in analysts' forecasts. By contrast, we find strong evidence of Japanese analyst underreaction to earnings announcements. Further, we find that analyst underreaction is more pronounced for firms with mostly permanent earnings.

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[39] This information was obtained from Mr Ekkelberg, the Marketing Director of Value-Line, and Ms Kawsharo, the New York sales representative of Toyo Keizai. Ms Kawsharo informed us that the Japanese version of *JCH* was published one month prior to the English version (i.e., translation from Japanese to English takes *JCH* a month). The publication date of the English version was used in this study. Forecasts were made by their analysts about two weeks prior to the publication of the Japanese version.

This article also found that accounting standards and 'culture' affect the interpretation of financial results. We find that analysts underreact to a larger degree to earnings reported under U.S. GAAP than under Japanese GAAP. These analysts' forecasts are also more optimistic and are less efficient in the use of information in past stock prices. One explanation as to why the analysts do not fare well when compared to those following Japanese GAAP firms is that U.S. GAAP distorts financial results of Japanese firms. The final result of this paper is that the U.S. analysts discount information in current earnings to a greater degree than their Japanese counterparts. They show, instead, a greater use of information in past stock prices. Further, in contrast to their Japanese counterparts, the U.S. analysts' forecasts display no optimistic bias. These results suggest that, even if financial statements are prepared under identical standards in different countries, they will not be 'universally understood and interpreted unambiguously' (Choi and Levich, 1991). Policy makers should, therefore, take into account the impact of each country's unique capital market norms and culture in addressing issues on accounting diversity.

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Why 1886? Historical Notes on the Passage of the Exchequer and Audit Departments Act

The British 1866 Audit Act was the direct outcome of Gladstone's vision for public-sector audit and the recommendations of the influential Select Committee on Public Monies in 1857. The Committee's recommendations to establish appropriation audits for all government departments received general approval on both sides of parliament. Its proposal to combine the Comptrollership of the Exchequer with the Board of Audit was not as well received. It was not until nearly a decade later that reform to give effect to the audit recommendations was finally brought about. A crucial factor in this delay was the resistance of Lord Monteagle to the abolition of the Comptrollership of the Exchequer.

Key words: Audit Act; Gladstone; History; Monteagle.

Throughout the very limited literature on the evolution of state audit in Britain[1] (Durell, 1917; Chubb, 1952; Normanton 1966) no-one has satisfactorily explained why it took nearly a decade to put into effect the Select Committee on Public Monies' recommendations of 1857 which argued that existing state audit arrangements be overhauled to strengthen the relationship between the state auditor and parliament. Despite the impact and widespread acceptance of the Committee's work it was not until 1866 that the *Exchequer and Audit Departments Act* (1866 Audit Act) became law.

Using previously neglected archival material, this short article concludes that delays in audit reform could only in part be attributed to the frequent changes in government in the late 1850s and 1860s and to Treasury resistance as it attempted to preserve its influential, yet not widely appreciated, role in state audit.[2] Evidence indicates that the resistance of Lord Monteagle, the Comptroller of the Exchequer, to being removed from his comfortable and profitable sinecure proved to be a crucial impediment to audit reform in the period 1857–66. In the context of nineteenth-

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[1] State audit is a term which refers to the audit conducted in Britain by the central government's auditor, now the Comptroller and Auditor General.

[2] In a recent paper Funnell (1994) has demonstrated that the emergence of modern state audit followed an uninterrupted trajectory of increasing Treasury influence in state audit and hence the absence of independence for the Comptroller and Auditor General and his office after it was formed in 1866.

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century Britain, the disproportionate influence on government policy of individuals belonging to the ruling elite, such as Lord Monteagle, was not unusual.[3]

GLADSTONE'S BLUEPRINT FOR AUDIT REFORM

A decade before the *Exchequer and Audit Departments Act of 1866* William Gladstone and Sir James Graham had been convinced of the need to strengthen state audit in the hands of parliament (Gladstone's Diary entry, 16 February 1856, in Matthew, 1978, p. 104). This conviction was bolstered by the recommendations of the Select Committee on Public Monies in 1857, which saw great merit in extending Sir James Graham's appropriation audit to all state departments (HC debates, 6 August 1859, col. 1090). Throughout the next decade, for much of which Gladstone was the Chancellor of the Exchequer,[4] the foundations of an extended appropriation audit were put in place.

At the heart of the audit reforms which Gladstone had envisaged in his *Memorandum on Finance* in 1856 (see reference to this in Graham to Gladstone, 6 December 1856, A/M 44,164[5]) were a common set of accounting and audit procedures for all departments and a parliamentary finance committee which would 'assure a more simple and effectual check upon the issue and appropriation of public money'.[6] The latter objective was met with the establishment of a Select Committee of Public Accounts, or the Public Accounts Committee (PAC) as it came to be known, on 9 April 1861, and later its conversion to a Standing Committee of the

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[3] In circumstances where a person of high social rank occupied a position which the government wanted to reform, without the incumbent's cooperation the government often had to wait until they died or resort to extreme measures to pry them from their position. Possibly the most notorious example of this was the refusal of Queen Victoria's cousin, the Duke of Cambridge, to retire as Commander-in-Chief of the British Army and his opposition to reform of the British Army in line with the recommendations of the Hartington Commission (Royal Commission on the Civil and Professional Administration of the Naval and Military Departments, 1890). He was eventually induced to resign in 1895 after more than forty years as Commander-in Chief.

[4] William Ewart Gladstone (1809–98): Under-Secretary of State for War and the Colonies, January–April 1835; Vice-President of the Board of Trade, 1834–5; Secretary of State for War and the Colonies, 1845–6; Chancellor of the Exchequer, December 1852–February 1855 (he resigned in protest to the government's decision to give in to opposition pressure for a committee of enquiry, to be known as the Roebuck Committee, into the debacle of the Crimean War), June 1859–July 1866; Prime Minister, December 1868–January 1874, April 1880–June 1885, February–July 1886, August 1892–March 1894.

[5] A/M refers to 'Additional Manuscripts' which are part of the immense collection of Gladstone correspondence held at the British Museum.

[6] Gladstone's proposals for reform came at a time when the financial burden and difficulties experienced during the Crimean War had made demands for financial restraint in government even more popular. Whereas national expenditure in the ten years before the Crimean War had risen only 8.75 per cent, during the period 1853 to 1859 (which encompassed the Crimean War) the corresponding figure was 58 per cent (Shannon, 1982, p. 408). Between 1847 and 1851 government expenditure was £51,750,000, rising to £66,700,000 between 1852 and 1856 (HC debates, 26 February 1866, col. 1102).

House on 31 March 1862.[7] Dissatisfaction within parliament with the freedom given to the Executive in the Miscellaneous Estimates also served to direct attention on the need for a uniform system of accounts and audit across all government departments to strengthen parliamentary control (HC debates, 2 February 1860, col. 447 and 11 March 1862, cols 1306–7). This led to the establishment of the Committee on Public Monies in 1856.

THE COMMITTEE ON PUBLIC MONIES 1856–7

Establishment

The greatest influence on the audit reforms of 1866 was the recommendations of the Committee on Public Monies in its 1857 report,[8] particularly those which expressed the Committee's belief that a closer relationship should be encouraged between the state auditor and parliament (Lord Montagu, HC debates, 4 March 1862; Chancellor of the Exchequer, HC debates, 4 March 1862). Lord Welby described the Committee as

> one of the most remarkable committees both as regards to its constitution and the work it did. The Committee on Public Monies knocked on the head once and for all the idea that an effective control could be exercised by watching the issue of money from the Exchequer and showed that the real control of Parliament must be by ascertaining, through independent officers of its own, how the money had been spent. (Great Britain, 1902, *National Expenditure Committee,* Minutes of Evidence, Q. 2508)

Sir Francis Baring had originally proposed a committee to examine the organization and state of the public accounts in 1854.9 He was finally successful when in April 1856 he moved for a 'Select Committee to inquire into the Receipt, Issue, and Audit of Public Monies in the Exchequer, the Pay Office, and the Audit Department' (HC debates, 24 April, col. 1456). He envisaged that the Committee would be concerned with broader accountability issues, not the details of accounting. Palmerston and his Chancellor of the Exchequer opposed the motion on the grounds that the then present public accounting systems were more than satisfactory, that 'there was no ground whatever for supposing that our system of public audit was anything but perfectly efficient and accurate'. Accordingly, the reforms which the Committee proposed would be a waste of time (HC debates, 24 April 1856, cols, 1461–6). However, there was sufficient dismay at the deficiencies of Executive financial management and state audit, some of which had been glaringly revealed by the chaos of the Crimean War and the investigations of the Royal Commission into Army Supplies (the McNeil–Tulloch Commission; see Funnell, 1990), and disagreement with the Chancellor of the Exchequer's assurances, both within the government and the opposition, to see Baring's motion carried (Williams, HC debates, 24 April 1856, col. 1463, and Ellice, col. 1464). Gladstone appeared to support Baring but suggested that a commission of enquiry and not a committee of the House would be a better way to deal with such a technical and dry subject as state audit (HC debates, 24 April 1856, col. 1457).

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[7] The Committee was to be nominated by the House of Commons at the start of each session under Standing Order 57. The Chairman was taken from the opposition (Great Britain, 1902, Committee on National Expenditure, Minutes of evidence, Bowles MP, Q. 1017). Originally the PAC had nine members which was increased to eleven in March 1870, fifteen in 1893, dropping to eleven members in 1993 (Great Britain, 1938, *Epitome*, p. 7). The first PAC included Sir Francis Baring, Sir Stafford Northcote, Sir James Graham, Sir Henry Willoughby and Richard Cobden (HC debates, 9 April 1861).

[8] The Committee was composed of: Sir George Lewis, Sir Francis Baring, the Chancellor of the Exchequer, Sir James Graham, Mr Wilson, Lord Derby, Sir Henry Willoughby, Mr Bowyer, Mr Hankey, Mr Henley and Mr Cardwell.

[9] Sir Charles Bowyer and Sir Henry Willoughby both claimed the credit for suggesting this form of inquiry (HC debates, 24 April 1856, cols 1456, 1465).

Gladstone had favoured for some time the abolition of the office of Comptroller of the Exchequer[10] and a coincident strengthening of audit (Diary entry, 16 February 1856, in Matthew, 1978, p. 104). Both Gladstone and Sir Charles Trevelyan, however, had foreseen in 1854 problems with the difficult and widely disliked Lord Monteagle, who currently occupied the position of Comptroller of the Exchequer, when they were initially canvassing ideas for financial reform in the public sector (Trevelyan to Gladstone, 21 February 1854, A/M 44,333, fol. 198). Thus, Gladstone saw an inquiry as an opportunity to put into place his far-reaching plans for reform, finalized with Trevelyan while Gladstone was at the Exchequer (see Great Britain, 1857a, Appendix I, p. 528) Gladstone and Trevelyan were afraid, however, that if the inquiry was conducted by the House that Lord Monteagle, whom they saw as 'plausible and clever', would be able to influence the members against Gladstone's scheme,[11] for it appears that Monteagle was well aware of Gladstone's plan to abolish the Comptrollership of the Exchequer (Trevelyan to Gladstone, 21 February 1854, A/M 44,333 fol. 198; Anderson to Gladstone, 10 June 1857, A/M 44,387, fol. 309). The most intractable problem facing Gladstone and Trevelyan before they could implement their vision for state audit, therefore, was how to remove the troublesome and highly connected Lord Monteagle.

Main Recommendations

The most important audit recommendation of the Committee on Public Monies, which was later echoed in the first report of the PAC in 1860, stressed that appropriation audits should be extended to the income and expenditure accounts kept by the Treasury, the revenue departments and the civil service departments (Great Britain, 1860, Select Committee on Miscellaneous Expenditure, Minutes of

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[10] The Office of the Comptroller of the Exchequer was created in 1834 when the Auditor of the Receipt, Lord Greville, died. This allowed the Lower Exchequer to be reorganized by 4 Will. IV, c. 15, *An Act to Regulate the Office of the Receipt of His Majesty's Exchequer at Westminster,* which abolished the office of Auditor of the Receipt and Clerk of the Pells (s. I). The powers and duties of these two offices were then transferred to the new office of Comptroller General of the Receipt and Issue of the Exchequer (Comptroller General of the Exchequer) whose independence was supposed to be guaranteed by removal of the Comptroller General only by a joint address of both Houses (s. II).

[11] The antipathy between Gladstone and Monteagle was well known, particularly from Gladstone's gibes in parliament. Shannon refers to Monteagle as Gladstone's 'old enemy' (1982, p. 406).

Evidence, Qs 692, 693; Proceedings of Committee on Public Monies 1857, pp. 500, 511; PAC, First Report 1861, part iii; see Funnell 1994.)[12]

The Committee further strongly supported Gladstone's contention, as presented to the Committee in his *Memorandum on Finance*, that the audit envisaged on behalf of parliament could be carried out by a body which encompassed both the comptrollership functions of the Comptroller of the Exchequer and the audit responsibilities of the Board of Audit.[13] To counter objections to the amalgamation, Gladstone, who was now within sight of a goal he had set in 1854, rebuffed any suggestions that a conflict of duty would arise and stressed instead what he saw as the several advantages: the status of the head of the Board of Audit would be improved; independence of the comptrollership function would be enhanced; and there would be a salary saving to the state (HC debates, 15 June 1865, col. 286). Joining the two offices would also present very little additional burden on the time of the chief auditor. Comptrollership functions involving the issue of exchequer bills previously had been greatly simplified and the task of ensuring that issues of money from the Bank of England were under Treasury warrants which did not exceed the total amounts approved by parliament did not take much time (Gladstone, HC debates, 15 June 1856, col. 286). In the presence of an appropriation audit which would be applied to all government departments, the comptrollership function carried out by the Comptroller of the Exchequer would make a relatively insignificant contribution to parliamentary supervision of Executive spending. Advocates of the union argued that not only did a separate Comptroller of the Exchequer provide no worthwhile check on Executive expenditure, but it also weakened the opportunity for better financial control by causing 'Parliament and the country to shut their eyes to a danger that was real, and prevented them turning their attention to what was a real security . ... an efficient system of audit' (Sir Stanford Northcote, HC debates, 1 March 1866, col. 659). Continuation of the office of Comptroller of the Exchequer, therefore, was seen as a deceptive and ineffective anachronism. Amalgamation of the two offices was seen as essential if accountability to parliament was to be improved.

LORD MONTEAGLE AND CONSOLIDATION OF THE COMPTROLLERSHIP OF THE EXCHEQUER WITH THE BOARD OF AUDIT

Lord Monteagle's public career was surrounded in controversy almost from the start.[14] As Chancellor of the Exchequer between 1835 and 1839, Lord Monteagle, then Thomas Spring-Rice, was unpopular for his arrogance and his self-seeking manner, and derided for the incompetence which eventually forced him from this office (*The Times*, 10 February 1866). He did not leave without exacting considerable compensation from the government. In return for his removal as a persistent source of embarrassment and danger to the government, Spring-Rice was given both his title and the 'very agreeable and well paid office' of Comptrollership of the Exchequer (Liddell, HC debates, 27 February 1840, col. 701). Monteagle's move to the 'peaceful and calm retreat' of the comptrollership was bitterly resented within parliament by the opposition and some government backbenchers, especially when it was suspected that the incumbent, Sir John Newport, had been encouraged to surrender his office with the promise of a generous pension (Liddell, HC debates, 27 February 1840, col. 679).[15] Lord Monteagle would be no less formidable in resisting attempts at his removal.

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[12] William Macaulay of the Treasury was to claim credit as the author of the principles of appropriation audit as embodied in the 1866 Audit Act (Macaulay, 1867, pp. 6,7).

[13] Gladstone's views were influential, in part, because he had been a major player in most public sector financial reforms in the mid-nineteenth century. He had also had a long and successful career in government, as shown in note 4 above. Possibly more importantly, Gladstone was very close friends with members of the Committee, most notably with Sir James Graham, with whom he shared similar views on public finance (see, e.g., Graham to Gladstone, 6 December 1856, A/M. 44,164).

[14] For more details on Lord Monteagle's career see Minutes of Evidence, Committee on Public Monies 1856, Qs 1–4, 26 May.

In the event, Monteagle was 'less successful than he expected' in convincing the Select Committee on Public Monies of the continued importance and relevance of his Office.[16] Instead, he was placed 'upon his defence', much to the satisfaction of Anderson, who hoped to 'succeed in driving a nail into the coffin of that Monster Cheat, the Exchequer' (Anderson to Gladstone, 10 June 1857, A/M 44,387, fol. 309). The inquiry by the Committee on Public Monies went badly for Monteagle, who was forced to defend his office against the Treasury's (i.e., Gladstone's) plan to abolish it with a long document detailing the history and contemporary importance of his office to public finance as a check on the Executive's spending on behalf of parliament (Great Britain, 1857d). The Committee was not convinced by Monteagle's panegyric and recommended instead that the office of Comptroller of the Exchequer be combined with the Board of Audit.[17]

DELAYS AND FINALLY AUDIT REFORM

Although the value of the Committee on Public Monies' work was accepted on both sides of parliament, no immediate reforms to state audit were forthcoming. While some of its recommendations accorded well with the intentions and allegiances of the major political players, its suggestions for audit were far less well received (Sir George Bowyer, HC debates, 1 March 1866; Lord Belper, Lords debates, 8 June

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[15] It had been understood at the time that the position of Comptroller of the Exchequer had been created in 1834 that it would be without pension. Although Newport had understood this before taking this very lucrative position, he would only leave if he was given a pension. Therefore, it was obvious that Newport's resignation was being bought by the nation for blatant political purposes (see HC debates, 27 February 1840).

[16] Despite his obvious and well-known shortcomings, Lord Monteagle was supported in his denunciations of the amalgamation by friends in the House of Lords, among them Lord Stanley and Lord Alderley (Trevelyan to Gladstone, 21 February 1854, A/M 44,333, fol. 198).

[17] In the *Exchequer and Audit Departments Act of 1866* the head of the new organization was called the Comptroller General of the Receipt and Issue of Her Majesty's Exchequer and Auditor General of Public Accounts.

1866, cols 16–19; Romilly to Disraeli in a 'Memorandum to the Public Accounts Committee Inquiry',[18] *BPP,* 1867, Vol. XXXIX, p. 184).

From the early 1860s, as the patience of many members of parliament ran out, especially those who had formed the Committee on Public Monies, Lord Palmerston's government was repeatedly berated in and out of parliament for its inactivity in implementing the recommendations of the Committee on Public Monies for public-sector financial reform. It was accused of cynically obstructing reform which would introduce 'a system and an examination which would give the House a clear account of the way in which public money was expended' (Sir Henry Willoughby, HC debates, 20 February 1865; see also Great Britain, 1860, Select Committee on Miscellaneous Expenditure, Minutes of evidence of Austin, Secretary to the Office of Works, Q. 1195; Sir Francis Baring, HC debates, 21 February 1861; Lord Montagu, HC debates, 11 March 1862).[19] Many in the House either had no compelling interest in or could not be convinced of the need for reform of public audit. Others, like Peel, saw proposals to change the role of the Treasury in state audit as an affront to the Treasury and so acted as champions of the Treasury's virtue (HC debates, 11 March 1862).

Much of the impetus for financial and audit reform which had been generated by the bold recommendations of the Select Committee on Public Monies was drained by the change of government, which had occurred soon after the Committee reported, when the Whig-Peelites were replaced by the Earl of Derby's conservative government (Great Britain, 1860, Select Committee on Miscellaneous Expenditure, Minutes of Evidence, p. 173). Even with a further change of government in 1859 and the reinstatement of the more reformist Whigs,[20] the findings of the Select Committee on Public Monies, apart from some piecemeal changes to audit, remained dormant (see Gladstone's comments, HC debates, 15 June 1865, col. 284).

Given Gladstone's enthusiasm and commitment to the reform of state audit, Treasury opposition to giving the Board of Audit more authority and independence and the rapid changes in governments during the middle decades of the nineteenth century provide only part of the reason for the hiatus in reform after 1857. Instead, it was also due to Lord Monteagle's opposition and government reluctance to disturb present arrangements in the face of Monteagle's determination not to leave his position which caused Gladstone to delay consideration of a 'general re-construction

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[18] Romily later expressed his regrets to Gladstone that he had been put in a position where he had to disagree publicly with the Treasury and its Chancellor (Correspondence, 11 February 1867, A/M 44,412, fol. 56).

[19] There was a major debate in the Commons on 11 March 1862 on the need to have a committee to review the estimates and to reform financial control, but especially reform of the Board of Audit.

[20] The governments in the middle decades of the nineteenth century were:

Lord Palmerston	1855–8	(Whig-Peelite)
Earl of Derby	1858–9	(Tory)
Lord Palmerston	1859–65	(Whig-Peelite)
Lord John Russell	1865–6	(Whig)
Earl of Derby	1866–8	(Tory)
William Gladstone	1868–74	(Liberal).

. . . of [audit] upon the broad principles which [Select] Committee . . . contemplated' (Gladstone, HC debates, 15 June 1865, col. 284). This quickly changed with the announcement in mid-1865 of the imminent retirement of the chairman of the Board of Audit, Edward Romilly. It provided Gladstone with the opportunity he needed to raise the profile of his reform agenda (Gladstone, HC debates, 15 June 1865, col. 284) and opened the way to reforming the Board of Audit and its mandate before a successor was nominated. With one component of the proposed amalgamation soon to be freed, it meant that Lord Monteagle remained as the last major impediment to reform.

Monteagle's spirited defence of his position before the Select Committee on Public Monies, and the conditions under which his predecessor had left office, had placed everyone in no doubt that Monteagle had no intention of relinquishing his sinecure to be consigned to a retirement without a pension.[21] Parliament also was to show itself loath to take the extreme constitutional step and invoke its powers to have him removed against his will. Monteagle had been appointed 'during good behaviour', that is, for life, as a means to promote the independence of his office and could only be removed by an address from both Houses (4 Will. IV, c. 15, s. II), a most unlikely event given the constitutional implications of this course of action and Lord Monteagle's high social rank and connection within parliament. Monteagle therefore believed that while ever he held his office Gladstone's reforms might be held in abeyance.

With the announcement of Romilly's intention to retire, and knowing that the government was intent on following up its establishment of the Public Accounts Committee in 1861 with further reforms to public-sector accounting and audit, Monteagle seemed to sense that the vacant position at the Board of Audit meant that his time may have been limited. Ever the opportunist and finding himself in the same position as his predecessor, Monteagle sought to strike a bargain with Gladstone and the government which would provide him with a pension. Therefore, on at least two occasions, he communicated his willingness to Gladstone to relinquish his office, *for the right terms* (Monteagle to Gladstone, 8 and 28 June 1865, A/M 44,406). Gladstone seized the opportunity to close the way back for Monteagle and on 15 June 1865, a week after Monteagle's tentative proposal, informed parliament of Monteagle's offer to retire and at the same time proposed a pension of £500 p.a. (HC debates, 15 June 1865, col. 286). Before parliament could act, Lord Monteagle's death on 9 February 1866 cleared the way for the implementation of Gladstone's scheme for state audit in the following June.

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[21] The position of Comptroller of the Exchequer embodied the desirable attributes of a sinecure: little responsibility, a few duties which could be dispensed with in less than one day a week, prestige and very attractive remuneration. In these circumstances it was unlikely that Monteagle would readily seek to surrender his position and retire.

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ABACUS, Vol. 32, No. 1, 1996

FRANK L. CLARKE

A Treasury of Accounting Thought: R. J. Chambers' *An Accounting Thesaurus: 500 Years of Accounting**

'[A]ccounting has been influenced by shifts in the ideas of its practitioners and teachers and by the exigencies of those served by it,' Chambers notes in the Preface to his *An Accounting Thesaurus: 500 Years of Accounting* (1995).[1] Those ideas, the basis for them, their theoretical rationales, descriptions and observations relating to their attendant circumstances, misconceptions and insights, all of which have influenced both the thought regarding accounting and its practice, are amassed in what truly is a *treasury* of accumulated knowledge regarding accounting as an integral facet of human endeavour.

As with most facets of human endeavour, accounting is pursued by its practitioners with most regard for the technology of the moment and the explanations given for its dominance, with neither understanding of its antecedent ideas nor the practices they spawned. That possibly is equally true of the teachers of accounting, the observers of its role in contemporary commercial affairs, those responsible for the codification of standards for its regulation, the law-makers and the law-breakers.

It might, therefore, not be accidental that the fundamental ideas underlying current accounting practice display few of the trappings of having benefited from the experience of the best part of 500 years of trial and error, learning from the fallout of the folly of the past, or drawing from the intellectual development in its contiguous disciplines.

A *PREPARED* MIND

Contemporary accounting practice and the explanations proffered to explain its structure and its mechanisms attract considerable complaint and criticism world-

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[1] Elsevier Science, Pergamon, Oxford, xxxi+1011pp., £70, ISBN 008 042 573 9.

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* This review article was commissioned. Frank Clarke was a student and colleague of Emeritus Professor Raymond Chambers, the Founding Editor of *Abacus*. The subject of the review represents arguably the first attempt at compiling a thesaurus of accounting and cognate literature, and as Clarke notes. 'it assembles... for the first time a chartulary capturing the essence of 500 years of accounting thought, its background influences, its wisdom and its folly, its doubletalk and doublethink...[It is undeniably] inspirational in its vision' and is essential reading for students, teachers and practitioners of accounting. [Editor's note]

wide. Despite centuries of declarations of its function to provide financial information about the wealth and financial progress of business entities, the end-products of contemporary accounting are, generally, not serviceable for assessing and evaluating the financial characteristics of firms. In many respects the data in contemporary financial statements are less serviceable than their predecessors. In many respects accounting remains an immature discipline.

One potential and highly plausible explanation for the current impasse in accounting is unprepared minds amongst those currently shaping practice in the form of compulsory national and international standards. Louis Pasteur observed that 'Chance favours the prepared mind'. Point is that little is discovered, little invented, virtually nothing developed and perfected, in a vacuum. Most individuals fail to 'understand the meaning of what they see' (Kohn, 1989, p. 1). Most importantly, few see the connections between what they see and other things. Few appear to have considered what Rozak (1986) calls 'master ideas'. Many who could have developed the discipline of accounting but did not, failed to make connections between accounting and the elements of the contiguous human endeavour whose explanations lie in the literatures of sociology, psychology, history, law, economics, mathematics and the like. In particular, it appears that few in a position to influence the course of the development of accounting connect the accounting mechanisms they construct to the established understanding of—money, its uses and characteristics; purchasing power and general purchasing power; the theory of prices, price structures, price changes and price level changes; wealth and income; and financial position. One is encouraged to conclude that their minds were (and remained) unprepared for the task of progressing accounting thought and practice. We might presume them to suffer in a financial and commercial sense from what Hirsh (1987, in another context) described as a *cultural illiteracy*—the lack of the background knowledge and the contiguous framework which structure the setting in which accounting functions.

It is against that background that R. J. Chambers has pursued his inquiries into accounting in general and his critique of its undisciplined development, its unserviceable contemporary practices and alternatives to them, in particular. Chambers' *An Accounting Thesaurus*. . . (*AAT*) assembles between two covers for the first time a chartulary capturing the essence of 500 years of accounting thought, its background influences, its wisdom and its folly, its doubletalk and doublethink. *AAT* thus provides a historical perspective of accounting thought and the influences upon it, drawing comment from both attached and detached observers of its progress and regress, from its teachers and practitioners, the consumers of its products, from its scholars and its charlatans, from those who have developed its dominant themes over the years and from those who have manipulated and exploited it for their own benefit and to the detriment of others.

Explaining the background to the reprint of his *Accounting, Evaluation and Economic Behavior* (*AE&EB,* 1966) in 1974, Chambers explained the way by which he stumbled into his all-engrossing inquiry into accounting through his disenchantment with the accounting data presented to him when working in a price regulatory environment. Those data were unserviceable for making the assessments and evaluations of the financial characteristics of the firms whose prices he was to adjudicate: 'In the face of idiosyncratic accounting [it] was very much a hit-or-miss affair. I felt a firm impression that the securities market was also hampered by the individual differences in the methods of accounting' (1974, 'Development. . . ', p. vi).

His detailing of his progress to *AE&EB* provides insight to the form, content and structure of the massive collection of entries in *AAT*—insights to the connections drawn between the technical, economic, financial, social and political facets of adaptive human behaviour and Chambers' deep association with the attendant literatures addressing such matters. Likewise, it exposes his inquiry into the nature of technologies other than accounting (physics, chemistry, engineering, medicine and the like) in pursuit of an understanding why they have developed without the constraint of the national boundaries which have plagued the development of accounting. Observing his analysis of the accumulation of the ideas presented in *AE &EB* and in over 200 articles and other books which pre- and post-dated it, Chambers noted:

> The work . . . enabled me to observe many financial and commercial events—inflation, recession, increases and decreases in the severity of taxation, changes in company laws and regulations—and the influence they had on the accounting of many companies. It enabled me to study the successes and failures of many companies; organisations, reconstructions, mergers and litigation. And it gave me time to work intensively over the views of the proponents and critics of conventional and other forms of accounting, time to benefit from the stimulus of writers, in a wide variety of other related fields. (1974, p. xv)

It is no surprise that the divisions of 'The Development. . .' bear a similarity (if at times more in content than actual title)—'Early Indications' (on the lack of accounting serviceability), 'Management Studies' (on the nature, constraints upon and essentially adaptive characterization, of business decisions), 'Early Work in Accounting' (on financial management), 'Accounting as Communication' (on communication of financial messages and, by virtue thereof, communication theory in general), 'Observation of Practices and its Consequences' (on the dissimilarities between the nature and development of accounting technology and other technologies), 'Theory Construction' (on the application to accounting of the principles of theory construction), 'Towards a General Theory' (the development of a coherent set of foundations, assumptions and postulates), 'Measurement in Accounting' (on measurement theory in general, and its application to accounting in particular)—to the divisional structure of *AAT*. Those who were taught by and worked with Chambers in his *Sydney School* of the 1960s, 1970s and 1980s, who sat through his seminars on the History of Accounting Thought and the Development of Accounting Thought, were struck by the massive accumulation of references upon which he drew, and their spread over a vast array of academic disciplines, in the social sciences and the physical sciences alike, in distinct fields and sub-fields. Accounting was demonstrated to be connected with other facets of human behaviour. Insights were gleaned from the technicalities of cognate disciplines and from the genetic technologies of which accounting made use, understanding was enlightened, historical accident exposed and evolutionary development contextualized. Virtually everything in accounting had a link to many other aspects of human behaviour, historical developments, veils of interpretation, claim and counter-claim, evidence and rhetoric, the methodological and the mythological, the logical and the absurd. *AAT* is the compilation of that knowledge.

CHAMBERS' *TREASURY*

Clearly the arrangement of this accounting treasury reflects Chambers' interpretation of the interrelatedness of the primary categories of entries and their sub-categories, ingeniously structured to order thought on accounting in a manner which could never be achieved in a conventional book or article. While it does not have either the narrow focus of a conventional manuscript or a specific theme to be exploited, perversely it addresses the focus and the themes and sub-themes of virtually every major tome and article on accounting that has preceded it. In one hit Chambers has facilitated for all a review of the lot. Not by offering new comment on any, but by virtue of their contiguity within the categories he uses.

Ten primary categories, 89 sub-categories and 692 sub-sub-categories house over 5,000 separate entries comprising extracts from a myriad of diverse sources: *Accounting in General* (Pot Pourri; The Domain of Accounting; Accounting as Art; Technology and Science; Accounting as Representation; The Subject of an Accounting; Functions of Accounting; Users and Uses of Accounting Information; Accounting and Accountability; Auditing; Auditor and Audit Reports); *The Economic Background of Accounting* (Economics and Accounting; Money and the Money Unit; The Variable Purchasing Power of Money; Exchanges and Prices; Value and Valuation; Wealth and Capital; Income and Profit; Choice; Decision Making; Premises of Choice, Financial Desiderata of Choice); *The Psychological and Social Background of Accounting* (Belief and Action; Observation and Inference; Signs, Symbols, Language; Information and Communication; Measurement and Measuring; Measurement in Accounting; Law and Order; Firms and Organizations; Financial Publicity; Mandatory Corporate Financial Publicity); *General Characteristics of Accounting* (Time in Accounting; Quantification in Accounting; Quality of Representations in Accounting; General Utility of Accounting; Financial Information Processing; Information Processing Orientations; Processing Data; Financial Summaries); *Financial Position and its Elements* (Financial Position, The Balance Sheet; Property, Resources, Assets; Asset Classes; Liabilities; Equity, Ownership, Proprietorship, Capital; Reserves; Group Assets; Fund Statements); *Dated Valuation of Assets and Equities* (Valuation; Valuation Based on Initial Cost; Valuation at Replacement Cost or Price; Valuation at Market Price; Value in Exchange; Selling Price; Exit Value; Net Realizable Value; Valuation at Net Present [Discounted] Value; Hybrid Valuation Schemes; Valuation of Various Assets and Liabilities; Annual and Occasional Valuation; Heterogeneous Valuations); *Income and Income Calculation* (Income Concepts; Income or Profit; Receipts and Revenues; Expenditures and Expenses; Matching, Allocation and Amortization in Income Calculation; Inventory Charges; Depreciation and Appreciation; Losses and Gains from Inflation and Deflation; Transfer Payments and Quasi-Expenses, Classification of Gains and

Losses); *Accounting Systems* (Cost Based Systems Generally; Practice Under Generally Accepted Accounting Principles [conventional, initial cost based accounting]; Features of Practice under Generally Accepted Principles; Index Adjusted Historical Cost [CPP] Accounting; Replacement Price [Cost] Accounting; Current Cost Accounting [CCA]; Current Monetary Equivalent Accounting; Present Value Accounting; Other Proposals and Observations); *Systematic Inquiry and Knowledge* (Science; Characteristics of Scientific Knowledge; Scientific Inquiry; Conditions of Inquiry, Creation, Innovation; Facts, Generalizations, Laws; Theory Construction, Testability and Testing; Description and Prescription; Advancement of Knowledge; Science, Art, Technology and Philosophy); *Accounting Beliefs and Knowledge* (Accounting Practices; Procedures and Rules; Guiding Dicta; Variance; Flexibility and Conflict of Principles; Accounting Theory; Accounting Research; Accounting Standards; Standard Setting; The Accountancy Profession; Accounting Training and Education); all supported by a Preface, Introduction, list of Abbreviations, an Outline of the Categories, Source Index and Subject Index.

That content accumulates into a such compelling and comprehensive setting for the discussion of accounting, its practice and its theories, that it is difficult to understand how many of the explanations of accounting have proceeded without visible recourse to material of its ilk.

Whereas that arrangement of the data will meet with the approbation of many, it is bound to receive the condemnation of others. But a dominating feature of the categories is the manner in which the entries slot neatly into place challenging, indeed contradicting, the thought that perhaps they ought to be somewhere else. In this respect Chambers is almost certain to experience the same treatment meted out to him over thirty years ago at the Berkeley Symposium on Accounting when he presented his checklist of characteristics and functions which he argued accounting *ought* to have. His selection of characteristics and functions were hotly contested, said by some present, and (since) by others not present, to be selectively chosen to best fit his preferred valuation of physical assets at their current selling prices and his injection of an adjustment to compensate for changes in the general level of prices into the calculation of periodic income or loss. A similar likely assertion will meet the categorizations used in *AAT*. It is equally likely that in keeping with the *nil* outcome of his 1966 challenge for all dissenters to come forward and identify which tests ought to have been included that were not, and which were included which ought not to have been, the critics will be long on rhetoric and short on action.

THE ACCOUNTING IMPASSE

An habitual feature of accounting, especially in its modern form, has been the manner in which its functions and its technical characteristics have been obscured, even obliterated, under the weight of conflicting interpretative veils. It may well be argued that there is a causal link between the isolating of accounting from the accumulated wisdom of which Chambers' treasury comprises a judicious representation and the on-the-fringe-like discourses that have appeared over the centuries in general and over the past fifty years in particular.

It is inconceivable, for example, that recourse to the incontestable nature, characteristics and functions of money, prices, price structures, the practice of scientific measurement, the ordinary rules of financial calculation and the like in *AAT* would not have discouraged many of the proposals appearing during the late 1970s and 1980s for injecting accounts with the effects of price and price level changes. It is impossible to imagine how anybody could consciously have accepted anything remotely like the *constant money convention* or how it could have survived as a fundamental proposition of historical cost accounting. Most importantly, the assemblage illustrates the manner in which accounting cannot be perceived as something apart from the society which it serves, cannot be perceived free from the influence of the psychological and sociological underpinnings of human behaviour, cannot be perceived an art not subject to the need to mesh with the legal, social and economic setting in which its end-products are to be serviceable.

Likewise, it is inexplicable, in the face of recourse to the established ideas of cognate disciplines, that so much of the doublethink and doubletalk which underlie the compulsory acceptance of such artifacts of accounting practices as future income tax benefits, goodwill on consolidation, capitalized expenses, and provisions for deferred income tax, deferred credits and the like, as assets and liabilities, respectively, could have so entrenched their places as acceptable theory explaining contemporary practice.

AAT provides insights to the background for Chambers' relentless development of his Continuously Contemporary Accounting (CoCoA), his vigorous defence of it and the basis for his dissection of the pet theories of those who preceded him (e.g., Paton, Canning, Sweeney and MacNeal), and his contemporaries (Baxter, Mathews, Staubus, Moonitz, Edwards and Bell, Gynther, Sterling, Ijiri and Mattessich). Individually the entries create settings in which the injection of their ideas on accounting can be assessed and validated against the established thinking through history on such matters. Collectively they weave a comprehensive foundation upon which to construct new mechanisms to account for emerging financial structures and arrangements. In doing so they expose the emptiness of so much that has been passed off onto generations of accounting students as explications of accounting as a dynamic mechanism. In particular, the accumulation in one place lays bare the frequent particularization of a specific focus and its promotion as a general theory *per se*.

Particularization in that manner has been a common event in the accounting literature. In the rich days of accounting debate during the 1960s and 1970s, particularization is especially evident in the partial theories presented by Staubus, Gynther, Baxter, Edwards and Bell, and Matthews. None drew in support of their contentions on the depth of established knowledge of the kind set out in *AAT*. Or, if they did, it was neither referenced in their texts nor apparent from their reasoning. And the recent attention given to theory construction and theoretical frameworks within which to address and explain what are perceived to be accounting anomalies bears a similar penchant for particularization. Agency, contingency, behavioural, and critical perspective frameworks exhibit that tendency.

It is instructive to thread through the discourse on such matters and to note the paucity of reference to the wider context of accounting or the influences upon it.

And when there is reference to the wider context, it is equally instructive to observe its selectivity. In this sense the storehouse of knowledge which comprises *AAT* exposes the limited focus of the new-age frameworks for the development of accounting theory and practice. In particular, it exposes the shallowness of the attempts by national professional accountancy bodies to develop a conceptual framework upon which to base contemporary practice. For virtually none of the conceptual framework exercises exhibit that they have drawn upon any coherent body of accumulated wisdom of the kind in *AAT's* assemblage. Paradoxically, it is a storehouse of knowledge that the conceptual frameworkers seek and of which the standard-setters appear to be blissfully unaware. Laid bare for all, the excuses are gone.

Valuable dictionaries of accounting, histories of accounting and of accounting thought have appeared in the past, but none can lay justifiable claim to Chambers' objective to 'give an historical perspective and an up to date conspectus of what accounting and its products were, are and do. Though not in itself a textbook, it is a complement to any and every textbook' (Preface).

An Accounting Thesaurus is truly that, and more! Illimitable in ambit, universal in applicability, it is inspirational in its vision.

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